SUPERIOR COURT OF NEW JERSEY
LAW DIVISION - MIDDLESEX COUNTY
DOCKET NO. L-1141-99

MYRON A. MEHLMAN as Administratrix Ad Prosequendum and Administrator of the Estate of Constance L. Mehlman, deceased, Plaintiff,	Civil Action TRANSCRIPT OF PROCEEDINGS
PHILIP MORRIS, INC., (PHILIP MORRIS, U.S.A.), R.J. REYNOLDS TOBACCO CO., Defendants.	VOLUME 8 PAGES 1399 - 1623

Monday, April 16, 2001
9:00 a.m.
1 JFK Square
New Brunswick, New Jersey

B E F O R E:

MARINA J. CORODEMUS, J.S.C.and a JURY

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NEAL BENOWITZ, M.D.			
By Mr. Klok	1429,1455		
By Mr. Clark		1450	1538

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(Court in session at 9:00 a.m.)
THE COURT: Good morning, everyone.
COUNSEL: Good morning.
THE COURT: Happy holidays to everyone. I think we've finally closed out the holiday season. My flowers are stunning. I don't know about anyone else's but mine peaked yesterday.
I did have some friends call me from D.C. over the weekend. They told me D.C. was in full bloom.
MR. BIERSTEKER: Yes, indeed.
THE COURT: There you go. There you go.
Well -- but just remember. We are the Garden State. That's just the Beltway.
All right. My understanding is we have an ambitious but targeted schedule for this week. I intend to as you do I'm sure accomplish a lot. We have several witnesses coming in today. Am I correct?
MR. PATRICK: That's correct, Your Honor.
THE COURT: Or this week. We're starting this morning with Dr. Benowitz?
MR. CLARK: That's right.

MR. PATRICK: That's right.
THE COURT: Sound recording.
Now, I'm told by the Clerks that there are some outstanding documents that parties have not been able to reach an agreement on. Is that correct?
MR. PATRICK: That's correct, Your Honor.
THE COURT: Last time we were here it was six documents. Did it grow from six?
MR. MICHIE: Your Honor, I think there's ten but they fall into two discrete categories.
THE COURT: This is a global issue? I think I'm going to send you in for the global stuff? All right. Would you enumerate since you're on your feet, Mr. Michie, the global categories.
MR. MICHIE: First, there's the issue of post-'74 documents. The plaintiffs have asked about post-'74 documents after 1974 when Mrs. Mehlman quit smoking.
THE COURT: Relating to what issue?
MR. MICHIE: For example, there's a document called Facts You Should Know which is an advertisement from 1994 that Philip Morris put in

the New York Times. Basically Philip Morris said, Cigarette smoking is not addictive. We do not manipulate nicotine.
The plaintiffs have offered that document. I think the purpose is to show pattern and practice. We are willing --
THE COURT: I thought it would be impeachment on admission. I could be wrong.
MR. MICHIE: We offer to stipulate that in 1974 that cigarette smoking was addictive.
THE COURT: Do we need that document

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for this morning's testimony?
MR. KLOK: Yes, Your Honor.
THE COURT: What is it? Yes?
MR. KLOK: Yes, Your Honor.
THE COURT: Go ahead.
MR. MICHIE: Basically our position is that plaintiffs are trying to base liability on conduct that occurred 20 years after Mrs. Mehlman quit smoking.
THE COURT: Okay. What's -- hold on. What's the proffer on that? Why do I need that now?
MR. KLOK: Your Honor, there are several documents that show tobacco companies denying that -- actually, I think all three of them

that are at issue this morning talk about the tobacco companies denying that nicotine is addictive. We think that, number one, they're statements against interest and they also show if it was true in '92 it was true in '74 and --
THE COURT: I agree with you it's admissions against interest. That's why I was just joking with Mr. Michie but absolutely now the question is what relevancy does it have regarding this particular case?
My pretrial rulings as I remember them -- I think I've tried to be reasonably consistent -- is that post-'74 documents would come in if, in fact, it went to the alternate design theory or it was a covert issue on the failure to warn where it was established that knowledge was known pre-'74 and had not been shared with the public because that impacts both on common knowledge and on the issue of what the companies knew and when they knew it so if you're, you know, showing -- and it falls into those categories, that's fine. I've already ruled that.
If, in fact, it's a fact that stands by itself post-1974 I don't understand where it impacts on this particular case.

MR. KLOK: Your Honor, we're going to introduce evidence this morning of showing how the industry knew the opposite before '74. In fact -- so we think it links up to the failure to warn issue.
THE COURT: It better.
MR. MICHIE: Your Honor, if I could just address that.
If we're willing to stipulate that 1974 our position was that cigarette smoking is not addictive that fulfills the same purpose? Introducing evidence of 20 years later --
THE COURT: It may or may not because if it shows pattern or practice of something you knew for a long period of time along the same theme, okay, then, in fact, it goes to the failure to warn which was the exact issue of common knowledge that you put out as a defense so that whole is -- that whole issue is integral within itself.
You're going down, Mr. Michie. I appreciate you're making your argument as zealous as it is, okay, but I caution the parties: It better

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link up.
MR. KLOK: Yes, Your Honor.
THE COURT: Okay. What's the second

category?
MR. MICHIE: The second category which Miss Roosevelt is going to address is the project HIPPO. Thank you, Your Honor.
MS. ROOSEVELT: Your Honor, the second category of documents is a group of third-party documents. They're all documents that were either produced by Brown and Williamson or BATCO, their parent company, and they all relate to what Mr. Michie said. They relate to the HIPPO study.
Basically the background of this is in the early 1960s Battelle Laboratories in Switzerland conducted research into the physiological effects of nicotine pursuant to a contract they had with the British American Tobacco Company and included --
THE COURT: These are all the newly-found BAT documents?
MS. ROOSEVELT: I don't know if they're newly-found --
THE COURT: Those of us who are catching up but okay.
MS. ROOSEVELT: Included in this research were studies called HIPPO 1 and 2 and they

focused on nic -- the action of nicotine on various physiological parameters in rats including the hypothalamo pituitary system. Thus the name HIPPO. The principal conclusion -- and I apologize. Some of these are big words. I'll have to read a little bit --
THE COURT: They're all Greek. Don't worry about it. Keep going.
MS. ROOSEVELT: The research was that nicotine stimulated the natural response to stress through activation of the hypothalamo pituitary system and proposed that the stimulation of this response could be one of the explanations for the pleasure of smoking. This conclusion had not been previously published in the scientific literature and to this day it has never been acknowledged by any researcher in the relevant scientific field as the mechanism for smoking pleasure.
The conclusion was not supported by the findings of the HIPPO documents itself and it's basically been categorized as bad science or erroneous science. It was never subjected to peer review although two independent pharmacologists at the time did look at this by Dr. Byrne and Dr. Armitage and both of them concluded that the HIPPO

studies were impossible to follow and contained conclusions that were wrong.
These documents have been recently excluded in both the Anderson case and then the Little case and the Anderson case in which I was actually present the Court actually conducted a hearing on it and two witnesses took the stand and

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concluded that both of the witnesses said it was bad science and in Little --

THE COURT: Did the Court have the opportunity to do that at 10 after 9 when the witness was before them despite the fact that both parties had a full-time Special Master for use -- for their use for an entire year plus a 30-day running pretrial time plus representations both sides a week before about the documents or was that judge given the opportunity 10 after 9 with the witness ready to sit in the box to conduct a hearing? Which one of those scenarios happened in Little?

MS. ROOSEVELT: Your Honor, I apologize for the last minute. Unfortunately we didn't know until Thursday after the close of Court that the plaintiffs intended to use these documents and in the past although they did designate them,

they withdrew them and so this is the first time they actually tried to use these in Court. We did have discussions with them before the trial but we're not assured whether or not they would use them and that's unfortunately why we have to raise it at this time.

THE COURT: Okay. Thank you. Who? Response.

MR. KLOK: I will, Your Honor.

THE COURT: Same question.

MR. KLOK: Your Honor, these documents were part of Dr. Benowitz disclosure. The defendants had raised an objection about 30 party documents and did raise it at many opportunities that you yourself had asked whether or not there were any other issues that should come before you.

THE COURT: I took all Thursday, folks, all Thursday. I said, Don't go home until all the issues are resolved. I don't know how many times I said that to you. I said it in chambers, I said it informally, I said it on the record. I said, This is why we're losing a day of trial. I want all issues clarified and resolved right through the end of the plaintiff's case.

The only unknown we had was Dr.

Cummings who had to be videotaped. Did we get that date straightened out?

MR. BIERSTEKER: I think it's Saturday, Your Honor.

MR. PATRICK: Saturday.

THE COURT: I don't want to pull the record but I'm telling you I said it numerous times. Does everyone remember that?

MR. KLOK: Yes, Your Honor.

THE COURT: You're all nodding your head. I guess you do. So why am I hearing this now ten after nine?

MR. KLOK: The issue raised is fodder for cross-examination and I think --

THE COURT: We've all adopted that phrase, haven't we?

MR. KLOK: And there is a document that links --

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THE COURT: Mr. Bialecki's here. That means my jury's up.
MR. KLOK: There's a document that links this project HIPPO directly with R.J. Reynolds. It was an Exhibit R-34 and if you mind -- if you --
THE COURT: Al, can you get that

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document, please?
THE COURT OFFICER: Yes.
MR. KLOK: The defendants have told me that they were not able to find that document in the records and I did my own search on it --
THE COURT: Thank you.
MR. KLOK: This document --
THE COURT: Which records were they unable to find it in?
MR. KLOK: They said generally in their own R.J. Reynolds' records but this document was actually produced by RJR in the Texas --
THE COURT: Excuse me. Excuse me. Do you people have a copy of it?
MS. ROOSEVELT: I have a copy of it.
THE COURT: I don't want to be reading by myself here.
Go ahead.
MR. KLOK: It was produced in the Texas tobacco Attorney General litigation that came from Texas Master Box 65022 and was also designated as a Texas exhibit by the Attorney General as 11521 so it was actually R.J. Reynolds who produced this document. It went from Madison Jayman (phonetic) who is general counsel for Brown and Williamson

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Company who is -- BAT is the parent company to B&W. They are privy to the research. It went to Ed Jacob who was senior partner at Jacobson Metger (phonetic) and it's addressed to general counsel, Mr. Ramm, who was general counsel for R.J. Reynolds Tobacco Company.
THE COURT: Thank you.
Mr. Charles, may I ask you since you were principal attorney at the Little case in what context did this issue come up during that trial?
MR. PATRICK: Your Honor, the -- there was a motion to exclude these documents and we elected not to use the documents so it was a matter of withdrawing the documents as opposed to the Court ruling on them.
THE COURT: So they were not excluded. They were withdrawn?
MR. PATRICK: Well --
THE COURT: Or they were excluded?
MR. PATRICK: Well, to the extent -- we filed a response. They -- Brown and Williamson was a party in that case. Brown and Williamson moved to exclude the documents, that they were bad -- quote, bad science. We put in a response for all practical purposes conceding that issue for purposes

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of that trial so that issue was really not T'd up.
THE COURT: What? Does it get to better science when it came north? What?

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MR. PATRICK: Well, we -- no, Your Honor. The science -- we still maintain that the science is good science but for purposes of that particular trial we did not argue that point and that's the -- the posture was that the motion by Brown and Williamson was that it was bad science. We elected not to respond to that issue.

There is a statement by the Judge on the record saying, Well, I don't want to see bad science in my courtroom, so to the extent that that's an uncontested, you know, ruling by the Court.

THE COURT: Ladies and gentlemen, again, I don't want to sound rhetorical but why am I hearing this at a quarter after 9 on trial? I took all day Thursday. I even stayed late. I said if anyone has any other issues -- I asked everyone while they were here, Is there anything else?

MR. PATRICK: You know, Your Honor, I can't -- I can't explain it other than this is one of the issues that the defendants had been aware of with Dr. Benowitz since he was disclosed as a

witness.

THE COURT: Thank you. Response.

MS. ROOSEVELT: Your Honor, as you know it's clear in New Jersey and you've ruled this in pretrial that in order for third-party documents to get in a state of the art in the State of New Jersey they must be reasonably attainable by defendants, they must contain reliable information of a technological or scientific nature and the portions they seek must be relevant to the time period.

I have a copy of the Judge's ruling in Little in which plaintiffs did concede that this was not good science. I have a copy of the Order from Anderson --

THE COURT: It would be good if I had it last week. I could have read it this whole weekend, right, but neither party chose to make that known to me. There were no phone messages over the weekend, Judge, we have an emergent issue because I was in communication with my law clerk as late as last night and I gave you people an option that if you had an emergency issue leave a message on the system, we'd call in at night, we'd find out and we'd get back to you. That's unprecedented and I

only do it in mass tort cases because I understand they're complex cases and neither one of you elected to do this -- neither one meaning neither side so I'm sure you've got all the documents now, Miss Roosevelt.

MS. ROOSEVELT: Again, Your Honor, all I can do is apologize. We didn't get this until the close of court on Thursday and because of Good Friday you would not be available.

THE COURT: Well, you're right. I was not available on Good Friday; however, I had my law clerk check over the weekend. We specifically checked these messages because I know things come up in these cases.

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Now, we knew this issue was coming up because parties said to me on Wednesday we have -- six was the number I recall. We had six documents that we needed to deal with, one of which was the B&W R and D issue and nobody said anything again.

MS. ROOSEVELT: I'm not sure what those were in reference to. I know the R and D is a Reynolds document and that dealt --

THE COURT: That's what I'm saying. That's one of the documents that had not been resolved and there were several others counsel had

spoken about and they said, We are going to talk. That was Wednesday. Thursday everyone is at the hotel talking and I came in here late because I know you were one of the attorneys. I think Mr. Butler was one of the attorneys here and I said, Is there anything else? Nobody said, Gee, Judge. Its unresolved. I think we may have to call you this weekend.

MS. ROOSEVELT: Would Your Honor like a copy of the Order in Anderson of the Judge's ruling in Little?

THE COURT: No. I would have liked it last week.

MS. ROOSEVELT: All I can do is apologize. We didn't realize that these documents were going to be at issue this morning.

THE COURT: I don't understand how you could not have known it. I clearly knew it from Wednesday.

MS. ROOSEVELT: I think those were six different documents because we didn't know until Thursday nights what documents plaintiffs were trying to use and at that point we made objections and we tried to work it out --

THE COURT: Was P 434 that I've just

been handed by Mr. Butler identified prior to today? To the defense?

MR. KLOK: Your Honor, it was on the exhibit list and there was an objection to that document.

MS. ROOSEVELT: And that document was designated for use on Thursday night of this witness.

I do have -- that particular -- that document I have an affidavit from a Mr. Leonard who states he searched the files of Reynolds and was not able to find a copy of that document or the HIPPO studies.

THE COURT: But you have been given this document prior to today, correct?

MS. ROOSEVELT: Well, it was on the exhibit list but it was not designated for the use of this witness and we did object to it --

THE COURT: I appreciate that but it's not like you're getting this today, correct?

MS. ROOSEVELT: We have seen that document before, that's correct, Your Honor.

THE COURT: Okay. That's -- that's why I have these things premarked. That's why I meticulously went through with you in -- let's see

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what month were we talking about? March. I said premark everything. That's why I had Mr. Patrick go back. Even on redirect I wanted things marked so there would be no question.

You know, I excluded issues from the plaintiff in the beginning of this case because they did not come forward in a timely manner to show the defense. Now I've got another document here -- I don't know the weight of this document, what it's going to -- what impact it's going to have but, you know, I don't understand. I have such talented people before me.

Now you come marshalled with an armload of documents and say, Oh, Judge. I have this transcript and I have that transcript and this study, and no one chose to tell me -- even give me the heads-up on this on Thursday. Maybe you want to take this home on the weekend, Judge, in case it comes up. I would have been happy to do that. I wouldn't have done it on Friday. I would have done it on Saturday or Sunday.

How long is Dr. Benowitz going to be on today?

MR. KLOK: Your Honor, I think he will go for the better part of the day.

THE COURT: Do you intend to conclude him today?

MR. KLOK: Yes, Your Honor.

THE COURT: Well, I suggest -- will you conclude him before lunch?

MR. KLOK: Might be pushing it, Your Honor, but I'll try.

THE COURT: No, no. I don't want you to try.

MR. KLOK: I don't think so, Your Honor.

THE COURT: I may look at some documents over lunch but I'll tell you I'm very displeased. You have some documents, I'll be glad to look at them at lunchtime but --

MS. ROOSEVELT: Thank you, Your Honor.

THE COURT: -- this is not the way justice should be conducted, folks. You both had sufficient time.

MR. KLOK: Your Honor, I think there was a motion filed in limine filed by the defendants on third-party documents.

THE COURT: Well, there were lots of motions in limine and everyone kept saying, We're

resolving everything, Judge, and up until Thursday when I called trial off to make sure that all the issues were done nobody brought this up to me, right?

MR. KLOK: That's correct, Your Honor.

THE COURT: Okay. Just want to be sure.

Anybody else have anything on the -- on the R and D document that we spoke about in

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chambers?

MR. PATRICK: I don't believe so.

THE COURT: Just say it. Come on. I don't have time.

MR. BIERSTEKER: I don't believe so, Your Honor.

THE COURT: Okay. All right.

There was a discussion in chambers last week regarding the admission of the R and D document. I had placed on the record why I thought this document had no hearsay exceptions. An offer -- the issue was whether or not it would be offered not for the truth of the matter asserted and, rather, offered for notice issues.

Mr. Biersteker listed a certain five

or six stipulations that he would be willing to put forth to the parties which was akin to if not the notice issue and we were waiting to hear from the defense. They would re-examine the document.

Since nobody has anything further for me I'm satisfied that the plaintiffs wish to take up Mr. Biersteker's stipulations, they may, in fact, do so but the document is excluded. No basis for admission under hearsay.

With respect to Dr. Goldblatt, Dr. Goldblatt -- the issue that was brought before me also is regarding whether or not the Doctor can express an opinion even though not designated as an expert by the plaintiff rather than is designated as a fact witness. Dr. Goldblatt again testified generally regarding diagnosis, treatment, prevention of lung cancer that Constance Mehlman had which was the primary cancer, that cigarettes was Constance Mehlman's cause of her lung cancer. Dr. Goldblatt it is anticipated from the submissions of the plaintiff wishes to describe the lung as a complex organ going through the anatomy. Also plaintiffs ask that Dr. Goldblatt be able to rebut and comment upon evidence and opinions that have been previously introduced by the defense.

I asked both parties to do some research on New Jersey. Although we quipped on the weekend to break -- last week to break a little tension in here regarding what the historical context of that was I was very clear on what it was. Neither party had briefed any New Jersey cases. They both then turned around and found Stigliano. From Stigliano the plaintiffs went on to find Ginsberg versus Saint Michael's Hospital 292 NJ Super 21 Appellate Division 1996.

In that case the plaintiff's spouse on behalf of the deceased husband brought a medical negligence action against a physician and a nurse claiming that the nurse had misrepresented an order from the doctor and negligently administered an increased amount of insulin to the patient.

Trial court prohibited the treating physician from testifying as the plaintiff's cause of action because the treating physician had not been listed as an expert witness, had not provided an expert report to the defense. Trial judge only

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permitted him to testify what he personally observed and what he did to treat the decedent.

Appellate Division relying on Stigliano reversed the trial court and held that,

quote, Treating physicians may testify as to any subject relevant to the evaluation and treatment of their patient. This at 32.

The Appellate Court then went on to quote Stigliano saying, quote, Because the termination of the cause of the patient's illness is an essential part of the diagnosis and the treatment the treating physician may testify about the cause of the patient's disease or injury.

Therefore, following Stigliano Ginsberg recognized the value of the treating physician coming in with that treating physician's own knowledge, personal observations to express an opinion not just as to what the plaintiff -- what the defense wishes the Court to limit his testimony to which is that which he personally observed and that which he did to treat the deceased.

As such I will let Dr. Goldblatt testify expressing opinions as set forth in Ginsberg.

Those are the issues that were brought to my attention last week and those are the resolutions.

Anything else before I bring the jury in?

MR. CLARK: Yes, Your Honor. I think one other thing that was pending as of last week was the scope of Dr. Benowitz's cross.

THE COURT: Now, wait. We actually cleared that up.

What I said was I was going to give you the right on cross-examination, okay, as to his qualifications, to give you latitude, wide latitude -- I know this was resolved -- wide latitude for you to ask about his qualifications. If at that time you felt that his qualifications -- because the whole issue was even though he was not a psychiatrist he was in the psychiatric branch of medicine teaching -- that I would allow you wide cross-examination on the predicate of his qualifications and at that time you can make a motion at side bar. Very clearly that resolved because again we had no follow-up deposition, no one sent for a syllabus, I had no idea what his courses entailed and the issue of the wordsmithing which is I think exactly the context of the conversation that we had was that the plaintiffs very, very broadly brushed the issue of smoking-related issues. I had no idea what that meant. No one had an idea what that meant so I said, fine. Based on that you have wide

cross-examination as to his qualifications and you could make your motion. Do you remember that conversation?

MR. CLARK: Judge, I do.

THE COURT: Then it was resolved, okay?

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Anything else before I bring -- what?
MR. CLARK: Judge, with apology, with the permission of the plaintiffs we were going to suggest that you explain to the jury Mr. Rosenberg's absence here.
THE COURT: I don't think that's necessary. I know this is a personal issue going on with Mr. Rosenberg. I told the jury that there were times when people were going to be at counsel table, not at counsel table and I told them that that was very normal during the course of the trial. Not -- obviously I didn't anticipate this particular issue because it happens. People's lives go on. There are times Mr. Butler wasn't here. You know, Mr. Michie's made his first presentation at counsel table today. You know, that happens. I think I covered that. No need to draw any undue attention to it.
MR. PATRICK: Thank you, Judge.

MR. KLOK: Just a correction --
THE COURT: Come on, folks. Half an hour already down.
MR. KLOK: -- my last name is Mr. Klok, not Mr. Butler.
THE COURT: My apologies. I was trying to do a word association. Get more points with my name, though.
(At this time the jury enters the Courtroom at 9:27 a.m.)
THE COURT: All right. Thank you very much. All be seated.
Good morning, my wonderful jury.
THE JURY: Good morning.
THE COURT: How's everyone?
THE JURY: Great.
THE COURT: Did I promise you good weather this weekend or what? Did I deliver? Well, I think so. Now the rest of my flowers need watering so you'll excuse the rest of the week but they had to peak for Easter and so they did and I hope everyone had a restful weekend.
We have a lot of work to go through this week. We got quite a number of witnesses we're going to have this week so again please be mindful.

Again, if anyone needs additional papers -- someone had requested additional paper. Please just let us know. Al has additional paper and he'll give you some on the break if you need it so not a problem and I think I covered the pen issue with you so pens are also -- yes. Mr. Clark has a backup. That's very good. Okay. All right.
With that we're going to start with a new witness this morning. Let us begin.
Next witness.
MR. KLOK: Your Honor, the plaintiff calls Dr. Neil Benowitz.
THE COURT: Dr. Benowitz, please.
N E A L B E N O W I T Z, M.D., having been duly sworn, testifies as follows:
THE COURT: Have a seat.
Charles, are we using microphones

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today, not microphones? What are we doing.
CHARLES: Microphones, Judge.
THE COURT: Doctor, we've had some spotty issues here so I just want to make sure you're on mike. What?
CHARLES: They're on.
THE COURT: Would you state your name again, please.

THE WITNESS: It's Neil Benowitz.
THE COURT: All right. Just a little. Okay. I think that should do it.
Sir, go right ahead.
DIRECT EXAMINATION BY MR. KLOK:
Q. Good morning, Dr. Benowitz.
A. Good morning.
Q. Dr. Benowitz, how old are you?
A. 55.
Q. Would you tell the Court and jury a little bit about where you were born and where you grew up?
A. I was born in Philadelphia. I was raised in the Philadelphia --
THE COURT: Excuse me. One second. Miss McGriff tells me she cannot see the witness.
Charles, can you shift that screen a little for me, please? Thank you for telling me. Just a little farther back. I think not -- not back towards you, Al. Back towards the door.
Good. Thank you for telling me.
I'm sorry, Doctor. Just want to make sure everyone's got a view of you.
THE WITNESS: That's okay.
THE COURT: You were just telling us

that you were from Philadelphia.
A. I was raised in Cinnaminson, New Jersey, which is across the river from Philadelphia.
Q. Okay. And, Dr. Benowitz, do you have any children?
A. Yes.
Q. How many do you have?
A. Three.
Q. Where did you obtain your undergraduate degree?
A. Well, I was an undergraduate at Rensselaer Polytechnic Institute in Troy, New York. I actually did not graduate. I left after three years for medical school.
Q. Okay. And where did you attend medical school?
A. It was in Rochester, New York. I graduated there from the University of Rochester with an M.D. Degree in 1969.
Q. Would you tell the jury what type of doctor you are?
A. I'm in internal medicine with specialty in clinical pharmacology and medical toxicology.
Q. Are you also a professor of

psychiatry?
A. Yes.

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Q. What is your medical training, Dr. Benowitz?
A. Well, I have -- I got my M.D. Degree in Rochester in 1969. I then did an internship and residency in medicine at the Bronx Municipal Hospital Center which is the county hospital in Bronx, New York. Following that I did a Fellowship in clinical pharmacology at the University of California, San Francisco, where I've been on the faculty ever since.
Q. What is medical toxicology?
A. That's a specialty of medicine that deals with the diagnosis and treatment of injuries due to chemicals or toxins. It includes drug overdoses, includes environmental toxins, it includes drug reactions.
Q. And what is clinical pharmacology?
A. That's also a specialty of medicine which deals more broadly with the issues of the effects of drugs in people. It includes the branch of teaching students and doctors how to use medications properly. It includes drug development, the discovering and evaluation of new drugs. It

includes drug safety, drug toxicity issues, drug overdose issues. Really is a specialty of internal medicine that deals with drug effects on people.
Q. And could you please describe to the jury the nature of your medical practice?
A. Well, I am a full-time academic physician and professor. I'm employed by UC San Francisco, University of California. I work at the San Francisco General Hospital. That is the county hospital for the City of San Francisco.
I spend about a third of my time in patient care, about a third of my time in teaching and administration activities and about a third of my time in research.
My patient care activities are a combination of out-patient clinic, mostly in cardiovascular disease. I spend two months of the year responsible for one of the medicine wards to supervise interns and residents one month in general medicine, one month in cardiology and then the poison control center is in my clinical pharmacology division and I spend about six weeks of the year as a consulting physician for the poison control center consultation service. That's my clinical activities.

My teaching includes running a post-Doctoral Fellowship program in pharmacology and toxicology so I train physicians in those areas. I also run a course for fourth-year medical students in therapeutics so it's teaching them how to use drugs in the optimal way in patient care and I do a lot of lecturing in the medical school and in the post-graduate arena mostly in -- in the areas of substance abuse, tobacco addiction, treatment of tobacco addiction and some in cardiovascular drug therapy.
I also have responsibility to run the pharmacy and therapeutics committee which is a

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committee that deals with drug policies for the hospital and another committee that deals with drug policies for the City of San Francisco public health system.

Finally, my research activities have progressed mostly on nicotine, its effects on people, nicotine addiction and tobacco and health problems.

Q. Dr. Benowitz, in your clinical practice do you counsel your patients to quit smoking?

A. Yes. My practice as I said is mostly

cardiovascular disease and smoking is a serious problem. It's known to aggravate or cause heart disease. A lot of my patients are smokers and I always when I find out that they're a smoker spend time talking about the issues of smoking and they have to quit.

Q. In the course of treating patients with heart disease do you have patients who at times have difficulty in quitting when they're faced with cardiovascular disease?

A. Well, most of my patients fit into that category. By the time you've been diagnosed with heart disease a number of physicians have already advised you to quit smoking. Most of my patients know that the smoking is bad for them. Most of them would like to quit smoking and have tried before and so there -- there is the issue of trying to find out ways to -- that they can succeed. It's a big problem for my patients.

Q. Can you give an estimate of how many patients you've counseled on quitting smoking?

A. Well, I see about ten patients a week and I would guess that probably three of those patients are smokers so I would probably give advice to three patients a week on stopping smoking.

Q. Have you studied or written on the topic of drug behavior?

A. Well, I've written a lot on addiction to tobacco. I've also written some general chapters on drug addiction substance abuse.

When you write about addiction or when you study addiction, addiction is a behavior that occurs in the context of drug ingestion or taking in a drug. There's no way that one can research addiction. You can't write about addiction without considering behavior because addiction is really a person's problems controlling drug use. That is a behavior.

Q. Can you explain how you studied the interaction of free choice and nicotine addiction?

A. Well, I've written about the issue parcelling out the factors that play a role in when a person stops smoking or continues to smoke, issues often raised about free choice. Does a smoker have free choice to smoke or not smoke? And when you analyze any choice for anything, not just smoking, choice is related to factors that influence a person on both sides; their past experience with some activity, reasons to do this activity, reasons not

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to do this activity.

For example, if you make a choice to drive your car at a hundred miles an hour it's influenced by what you think the experience is going to be, what the past experience is going to be, what the traffic is like, how many policemen are around, et cetera. There -- there are a lot of choices.

When you deal with smoking or not smoking there are factors -- motivation to quit smoking, peer pressure to quit smoking and opposing that are factors involving nicotine addiction. The reasons why people smoke have to do with nicotine and nicotine exerts many effects on people's mood and behavior and lives so it's a balance of factors. One factor which is very powerful, drug addiction. The other factor is things like motivation and peer pressure and what a person decides to do. Their free choice is merely the balance of those pressures and -- and I've written about the -- that balance.

Q. Okay. How long have you been working at the University of San Francisco?

A. University of California at San Francisco.

Q. Thank you, Doctor.

A. It's actually one of seven UC campuses. I've been there as a faculty person since

1973.

Q. And you mentioned earlier that you do research. Is that correct?

A. Yes.

Q. Could you describe some of the types of research you've done?

A. I started doing research in this area back in 1975 when there had been relatively little work done on nicotine's actions on people and what we began to do is to look at nicotine like I was trained to look at -- at any other kind of drug, like a medicine that you give someone, so it purified nicotine. We gave known amounts to smokers, we studied its effects, how the body breaks it down. We studied how nicotine intake controls smoking behavior, smokers' response to different kinds of cigarettes, smoker responses when they couldn't smoke as much as they wanted. We began looking over time at different products used to help smokers quit. We've looked at ethnic differences so we've looked at effects of smoking in African-Americans and Asians, Hispanics and Caucasians. We have looked at the effect of nicotine and heart and blood vessels to try to understand what nicotine does to the cardiovascular

disease.

Over 25 years we've tried to systematically understand the various actions of nicotine and how it keeps people smoking.

Q. Doctor, are you currently a full professor?

A. Yes.

Q. And what is a full professor?

A. Well, there are academic ranks in a

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medical school where you would start out as an instructor, then assistant professor, associate professor and full professor.

In our medical school full professor is one who has achieved world recognition in some areas so they're felt to be a world expert in that area. They've published a substantial body of research in that area. They have had substantial grant support for their research in that area and I achieved that rank in 1987.

Q. And in what areas, Doctor, are you a full professor?

A. Psychiatry and in biopharmaceutical sciences.

Q. Dr. Benowitz, are you a psychiatrist?

A. No.

Q. How did you become a full professor in psychiatry?

A. Well, addiction research in our medical school is primarily housed within the Department of Psychiatry.

My first research grants were done with a psychiatrist colleague back in the '70s and since my research involves addiction I -- the research fits in with the research activities of that department. I also do teaching about smoking, about nicotine addiction, about how to treat nicotine addiction in the medical school which again is something which the Department of Psychiatry does and I teach psychiatry residents as well about the questions of smoking addiction and how to treat it.

Q. Dr. Benowitz, can you list for the Judge and jury some of the awards and honors you've received?

A. Ove Ferno Award, the Alton Oshner Award, the Rawls Palmer Award. I received an American Thoracic Society Presidential Commendation and Mayo Clinic Distinguished Scientist award.

Q. Who was Ove Ferno?

A. Ove Ferno is a Swedish scientist who invented nicotine gum. Interestingly he did that

dealing with a problem with Swedish submariners, people in submarines who were smokers and couldn't smoke in submarines because you could blow up the submarine and they had severe withdrawal symptoms and so he invented nicotine gum as a way that the submariners as smokers could function in submarines and there is an award that's an international award named after him for extraordinary contributions to the science of nicotine and health or nicotine science and tobacco and health.

Q. You mentioned the Mayo Clinic award. Would you describe --

THE COURT: You're looking at me. I'm only the judge. This is a technical issue.

MR. KLOK: Okay. I apologize for that.

Q. You mentioned the Mayo Clinic award. Would you describe the nature of that award?

A. Well, each year the Mayo Clinic invites two scientists to spend several days at the

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clinic meeting with their staff. I'm also presenting a special lecture and I was invited as a special lecturer based on my research on nicotine and health.

Q. Dr. Benowitz, who is Dr. Alton

Oshner?

A. Dr. Oshner was a surgeon in New Orleans who was one of the first people to study smoking and lung cancer and there's the Oshner Clinic which is a very famous clinic for treating medical problems in New Orleans and honor him -- it's a U.S.-based award that annually gives a prize to someone who has done distinguished research in smoking and health issues and I received that award for my work on nicotine addiction.

Q. You mentioned the Rawls Palmer Progress Medicine award?

A. Yes.

Q. Could you describe that award, please?

A. That is an award given by the American Society for Clinical Pharmacology and Therapeutics which is the major society for clinical pharmacologists in the world so it's the professional organization for people who study drug actions on people.

I was president of that society as well but each year they give one award with special lecture to someone who has made outstanding progress in advancing medical knowledge and I received that

award for my work on treating addiction.

THE COURT: I'm sorry, Doctor. Could you just clarify? You said there was a professional organization for people who studied -- is it drug actions or people's reactions to drugs? I'm sorry.

THE WITNESS: Well, it's drugs in humans broadly.

THE COURT: Okay. That's what I needed to know. Thank you.

Q. Dr. Benowitz, how many articles have you published on the issue of smoking and health?

A. More than 300.

Q. What are some of the representative journals in which you've published?

A. I've published in the Journal of the American Medical Association, New England Journal of Medicine, Annals In Internal Medicine, American Journal of Public Health, Journal of Pharmacology and Experimental Therapeutics, Clinical Pharmacology and Therapeutics. That's a British medical journal and lots of others.

Q. Are those all peer-reviewed journals, Dr. Benowitz?

A. Yes.

Q. What does peer reviewed mean?

A. That means that when a scientist submits research to a journal a scientist would -- submits that for publication, the journal takes that research and identifies two or three peers -- peers meaning other scientists who would be knowledgeable

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about that area of research -- and they send it to those other scientists for review for their opinions as to whether the research is valid and whether the research is important and should be published and if those peer reviewers say the research is valid and important then the journal will publish the paper.

Q. Dr. Benowitz, have you co-authored chapters in textbooks that deal in part with nicotine cigarettes and health?

A. Yes.

Q. Can you tell the jury and the Judge what textbooks you wrote chapters in?

A. Well, there are a lot of different textbooks that I've written. One of the main textbooks there -- there's a Cecil's Textbook of Medicine which is a major textbook on internal medicine. I wrote a chapter on nicotine in that book. There's a clinical pharmacology textbook that is the main clinical pharmacology textbook that is edited by Melmon and Morelli and I've written

chapters on drug addiction for that textbook and drug addiction.

I've edited an entire book on nicotine safety which I edited myself and lots of other books as well.

Q. Have you ever served as an editor or reviewer for any other publications?

A. Yes. I regularly review papers for journals -- many different journals as peer reviewer.

Q. Dr. Benowitz, have you done any work with the Surgeon General of the United States?

A. Yes.

Q. Could you briefly describe what kind of work you've done with the Surgeon General?

A. Well, on a periodic basis every year or two the Surgeon General puts out a report that addresses some issue of smoking and health. I have worked as a contributing author on several of those reports including the ones on secondhand smoke, smoke and tobacco, chewing tobacco, ethnic differences and tobacco addiction or smoking effects, smoking and women and then in 1988 I -- I was one of the senior scientific editors -- that was the report on nicotine addiction and in that context

I was one of four scientists who basically put together the report.

Q. When you prepare those Surgeon General reports were there a wide variety of medical professionals involved in preparing and reviewing the Surgeon General reports?

A. Yes. The way a Surgeon General's report is put together is the editors sit down and decide what sort of topic should be covered to address the issue and then we decide which scientist should be invited to write draft portions of different topics so it might go out to 50 different scientists to write a draft report on some section, on some part of it.

Then the editors take that material and they synthesize it or put it together into a

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single volume. That's -- that has sort of -- it's a treatise with continuity so it's not with multiple authors. It's a single document.

After they put that together we select a number of peer reviewers, send the draft document to maybe 20 or 30 peer reviewers, get their comments, redraft the whole document. Then it gets sent to a number of governmental agencies; the National Institutes of Health, the CDC at -- and, of

course, the Surgeon General. They give their input to it and the document gets revised one more time and then the Surgeon General presents it to Congress so that's the process and it involves review with or the input probably of a hundred scientists altogether.

Q. Dr. Benowitz, have you done any other work with any other governmental agencies?

A. Yes.

Q. Could you describe which agencies you've done work for?

A. Well, I've worked with the National Institutes of Health on their grant study section. That is a -- that's the group of scientists that make judgments about who should get research grants.

I've worked with the Environmental Protection Agency on their panel that looked at the question of passive smoking and whether it was a health risk.

I've worked with the Occupational Safety and Health Administration on their hearings about whether there should be workplace controls for cigarette smoking. I talked about the issue of how much cigarette smoke nonsmokers get exposed to from smokers.

I've worked with the Food and Drug Administration when they were dealing with the question of whether nicotine was a drug and if it is a drug how might it be regulated.

MR. KLOK: Your Honor, at this point would you prefer me to offer Dr. Benowitz as a witness and then tender him over?

THE COURT: (Indicates.)

MR. KLOK: Your Honor, at this point the plaintiff offers Neil Benowitz as an expert in nicotine addiction as it relates to the biopharmacology health policy and individual behavior.

THE COURT: Thank you.

Mr. Clark.

MR. CLARK: Judge, subject to the objection we raised before we have no objection to the description --

THE COURT: Counsels at side bar, please.

Folks, get up and take a stretch.

(The following takes place at side bar:)

THE COURT: Bruce, did I not say you could have broad cross-examination if you wanted to

talk to him about the psychiatry of the issue?

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MR. CLARK: Yes.
THE COURT: Because if you're going to make your motion don't -- unless you just want to make it now, it's up to you but I'd like to give you a ruling and not stop him in the middle of his questions.
MR. CLARK: Judge, I'm not --
THE COURT: The ruling is real clear. I guess I wasn't.
MR. CLARK: Judge, I simply don't want the record to reflect by not raising the objection at this point that we have withdrawn --
THE COURT: What? In my court? No.
MR. CLARK: My point is to preserve the record, Judge. I didn't want there to be the implication that we've withdrawn the objection.
THE COURT: My point is always to preserve the record but you have an objection. I said I can give you wide latitude on the offering if you wanted to ask something about the psychiatry so I could make a ruling now. Now, if you don't want to ask questions on the psychiatry and you just want to make your motion, now, you can do that or -- option number two -- or if you'd like to ask

questions on the psychiatry now and then we can have the motion, I can do that. It's all up to you.
MR. CLARK: Judge, I don't -- we won't ask any questions at this point. We'll reserve --
THE COURT: Well, see, here's the issue. If you don't make a motion now, okay, and he asks questions then we get into interrupt testimony, okay, which is going to make for a disjointed presentation which is why I said on Thursday and today that I would allow you to have wide cross-examination on the predicate so you could ask him whether or not he has any credentials because as far as I've heard today -- and I don't want to eclipse your argument -- I haven't heard anything on advertising unless it's another wordsmith word that I haven't heard yet and I think -- and broadly speaking the only word I heard that even comes close to -- wait.
(Pause.)
THE COURT: Ah, yes. Motivation.
MR. KLOK: I think I can save time by short-circuiting this. We're offering Dr. Benowitz as to how a smoker reacts to public statements like the Frank statement, not advertising per se.

MR. CLARK: Then I -- based on that I think we can ask him a couple of questions.
THE COURT: There you go. See how nice this is working out?
MR. CLARK: Thank you, Judge.
THE COURT: Again, I apologize.
MR. KLOK: That's okay.
(The following takes place in open Court:)
THE COURT: Mr. Clark.
MR. CLARK: Good morning, Dr. Benowitz. Good morning, ladies and gentlemen.

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VOIR DIRE EXAMINATION BY MR. CLARK:

Q. My name is Bruce Clark and I'm here on behalf of Philip Morris. You may have -- remember we met last fall in your office in San Francisco?

A. Yes.

Q. At this point I have a few questions to ask you.

Specifically in the course of your writings have you ever written anything having to do with the impact of advertising on smokers?

A. In -- it's been included in some of the things I've written for different reports. For

example, there was an Institute of Medicine report where I was -- was part of the committee that wrote the report. This was on tobacco addiction and youth and there was a chapter in there --

THE COURT: I'm sorry. It was on tobacco addiction and what?

THE WITNESS: Youth, children.

THE COURT: Okay. Thank you.

THE WITNESS: Or young people.

A. And I was the one who wrote the -- drafted the section on addiction and in that I reviewed the various things that influence a person smoking, a child smoking, and initiation and -- and progression of smoking and in there there was a discussion of advertising factors.

Q. When you say you reviewed the influence of advertising were you including information from studies that had been done?

A. It was based on that. Advertising was not the major focus of it. That was just one of many factors that we looked at but, yes, it included review of some studies.

Q. And did the studies have to do with adult smokers?

A. Yes.

Q. Did you contribute in any way to those studies?

A. No.

Q. Have you ever done any original research on the topic?

A. No.

Q. Have you ever supervised anyone doing original research on the topic?

A. No.

Q. Have you ever reviewed any of the original data from the studies that you referred to?

A. No.

Q. So essentially what you did is you read studies and you cited them in a report that you prepared?

A. Yes.

Q. And that was not the focus of your report. Is that correct?

A. Right. That was just one of many factors to be considered understanding why kids start to smoke.

Q. But the impact of advertising wasn't the focus of that particular report?

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A. It was not the main focus, that's correct.

Q. Other than the report that you referred to have you done any peer-reviewed publications on this subject?

A. No.

Q. How many reports or studies that have been peer reviewed have you read dealing with this subject?

A. Probably half a dozen.

Q. And what's the most recent one in time?

A. I don't recall. That -- that review was in 1994. I recall some of the studies that John Pearce did in looking at Virginia Slims and the relationship between Virginia Slims' advertising and smoking in adolescent girls. That's the last one I remember specifically.

Q. And you can't remember any that dealt with adult smokers specifically?

A. I can't offhand, no.

Q. And that article was some time prior to 1994?

A. Yes.

Q. And you can't remember any articles more recent than that?

A. No.

Q. You mentioned that you teach courses at the University of California at San Francisco?

A. Yes.

Q. Do any of the courses that you teach focus on the role of advertising in smokers?

A. Not specifically. I do discuss advertising when I talk about the low yield cigarettes and smokers' perceptions. I talk about the low yield cigarette issue as an example of a public health policy where things haven't turned out the way people thought they would and I use advertising there as part of that discussion.

Q. And when you say part of that discussion how -- is that part of one lecture you're giving?

A. It -- it's when I talk about nicotine addiction and the impact of nicotine addiction on -- on how people smoke cigarettes.

Q. Okay.

A. And the concept of regulation of nicotine.

Q. And that comes up in only one lecture you might give?

A. Yes.

Q. And is that the focus of the lecture?

A. No. That deals with the low yields -- low yield cigarette issue and the risk perception concept that goes along with addiction, the behavior.

MR. CLARK: Judge, I have no further questions at this time.

THE COURT: Thank you. Anything on this?

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MR. KLOK: Is this for qualification purposes, Your Honor? This mike is fighting me.
CONTINUED DIRECT EXAMINATION BY MR. KLOK:
Q. Dr. Benowitz, do you make a distinction between advertising of commercial product versus position statements made by the industry?
A. Yes.
Q. Position statements --
THE COURT: Let's resolve this mike issue so we don't get distracted.
(Pause.)
Q. Position statement -- are you familiar with the Frank statement, Dr. Benowitz?
A. Yes.
Q. Position statements as those made in the Frank statement, do they -- have you studied the

issue of how that influences the smoker's ability to continue or cease his habit of smoking?
A. Yes.
Q. Do you consider that the same type of consideration that you might look at, for example, in an advertisement of Camel cigarettes?
MR. CLARK: Judge, I think we're going beyond the qualification issues.
THE COURT: This is the exact issue, the parameters of the qualification. I'll overrule that.
A. Those are different. When you deal with advertising you're trying to understand how people --
THE COURT: I'm sorry. I think the question was do you perceive it as the same type? It's a yes or no question, correct?
MR. KLOK: Correct.
A. No.
Q. Dr. Benowitz, could you explain what the difference is between those two types of ads?
A. Well, the statements from the tobacco industry are factual statements of opinion. They're in text, they're unambiguous. Advertisements depend on understanding the impact of -- advertisements

depend how a person sees it, how a person interprets it and there's a whole science of interpretation of what advertising means to different people. When you have a statement, it's a statement. It's unambiguous.
Q. How specifically is that related to a smoker's ability to quit or not quit?
THE COURT: No. This is beyond. Your motion's renewed. Your hand's up. You're doing something, right?
MR. CLARK: Yes, Judge.
THE COURT: I didn't think you were waving at me. I think you were making a point. That's sustained.
Q. Dr. Benowitz, when talking about smoking behavior how does -- do you have experience in interpreting how a smoker will take statements made about the health consequences of a product?
A. Yes.

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Q. And how is that relevant in looking at behavior of a smoker?
A. Well, one of the issues that comes up is when a person keeps on smoking do they understand the risks of what they're doing, and risk perception is very much influenced by the messages people get

about the products and statements about harm or lack of harm are important inputs in a person's deciding on the risk so it's very critical in understanding why smokers and drug addicts in general keep on using drugs that are potentially harmful to them.
THE COURT: Let me see counsels at side bar.
Folks, why don't you get up and stretch.
(The following takes place at side bar:)
THE COURT: Go ahead.
MR. CLARK: Judge, I heard a lot of discussion about what his opinions are going to be and why he thinks it's relevant. I haven't heard anything about his experience.
For example, Mr. Klok asked him, Well, your experiences are and he said, Yes, I have experience. There is no follow-up established. Why is that relevant? He hasn't lectured on the topic of -- he hasn't lectured on the topic of the fact about advertising and smoking and health other than of one or two in an overall -- he's never done any research. Basically all he's done is read -- he's done half a dozen articles. The most recent in time

were 1994. He has not -- did not do any research. He's not seen any of the data. He has not established anything else other than writing six articles about this specific topic.
THE COURT: Do you have a ditto on that?
MS. ROOSEVELT: Ditto.
MR. KLOK: Your Honor, there's a distinction between selling a point like you sell soap. He has offered testimony that he's an expert in -- he's warned the Surgeon General about smoking. He understands the motivational and behavioral aspects of why a smoker quits. I think when you put those two together what you come out with is the industry's position statements of why, for example, like the Frank statement show how -- why a smoker may or may not continue to quit, have much more to do with the motivational factor than how a person decides to buy a product that has been advertised commercially.
MR. CLARK: Can I just respond to one sentence and that's Mr. Klok said he understands the topic. I have read a lot about this. I understand the topic. That doesn't make me an expert. The fact is that --

THE COURT: No. Mr. Clark, really? I thought you knew.
MR. CLARK: Oddly enough -- there are a lot of things I'm not an expert about. The fact

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that he's read something, the fact that he understands the topic isn't expertise.

THE COURT: Here's the most telling. He said there's a whole specialized area in science that it's about the issue of risk --

MS. ROOSEVELT: Perception.

THE COURT: Thank you -- risk perception and the motivation of someone doing it. He didn't say, That's my specialty. He said there is -- I mean, he knows enough, Bruce, to say I understand exactly how this plays out and he clearly has more -- above the average ken of the jury and I'm sure to some extent because he's already cited the youth studies that he's done or that he's commented on that he understands this risk perception issue but what he doesn't say is, This is my area of specialty, and that's the critical difference, okay, and I allowed you to go back and I allowed Mr. Clark to go back because that is the real issue. Does he -- he understands the process. There's no doubt in my mind and I think his

distinction was some of the best we heard between advertising and policy statements but he doesn't say, But this is my expert area. That's the distinction.

MR. KLOK: Your Honor, he has testified that he is expert in deciding or understanding why and what motivates a smoker to quit.

THE COURT: Well, that's --

MR. KLOK: It's within that context that we're using his testimony.

THE COURT: No, no. This is what I said at the first side bar. Clearly the issue of motivation is another broad-brushed area but you went back twice and asked him specifically once about the Frank study and once about his individual work in this and his response was -- his response was not, Oh, yeah, absolutely. I use this in my work. His response was there is a separate area of study on this that he understands but that's not his area so I will allow him to testify on public health, I will allow him to testify about internal medicine, I will allow him to even testify about pharmacology, the whole pharmacological response area and I would give him some general latitude on

motivation but not to the extent that it becomes a behavioral science psychiatric issue because that he is not qualified. I will allow him latitude on motivation, okay?

MR. CLARK: Understood, Judge.

(The following takes place in open Court:)

THE COURT: Ladies and gentlemen, I will qualify Dr. Benowitz to offer expert opinions in the area of public health, I will allow him to offer testimony in the area of internal clinical pharmacological and medical toxicology and within limitations on motivation.

Go ahead, sir.

MR. KLOK: Thank you, Your Honor.

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BY MR. KLOK:

Q. Dr. Benowitz, can you generally describe what the pharmacological effects of nicotine are?

A. Well, let me start with smoking a cigarette.

A cigarette is tobacco that's got nicotine in it. When a cigarette burns it boils off nicotine so it becomes like you're boiling water. Then nicotine gets incorporated or trapped within

particles in the smoke. These particles contain tar, water and nicotine. These particles are inhaled. They go into the lung. They get absorbed to the lungs quickly.

Nicotine passes into the bloodstream and it goes quickly to the brain so it gets to the brain in about 10 or 15 seconds from a puff.

Once it gets in the brain it -- it acts on what are called nicotine receptors. To understand what nicotine does you have to understand that there's substance in the brain that's called acetylcholine. It's a hormone. This hormone is responsible for substantial amounts of nerve communication so when one nerve signals another it works by releasing acetylcholine which transmits a message.

The way acetylcholine works is it combines with what's called a receptor --

THE COURT: What is acetylcholine? Can you tell me?

THE WITNESS: Acetylcholine.

THE COURT: What is that?

THE WITNESS: It's a chemical, small chemical that's made by nerve cells and released by one nerve cell, then passes to another nerve cell

and carries information. So it's a signaling hormone.

THE COURT: Okay. Thank you.

A. A receptor is a protein that's in the body that is used to translate a cigarette from a hormone to some effect. You can think of a receptor as a lock and the hormone as a key so the receptor is shaped in just a certain way so that it allows certain hormones such as acetylcholine to combine with it. It then opens up a lock -- the lock turns out to be a pore, a channel, which allows then some electrical impulse to occur and some event occurs.

Well, nicotine is shaped like acetylcholine so instead of having the body release its own acetylcholine which it normally does, when you smoke a cigarette, nicotine reacts with those receptors that are meant for the body's hormones. Now, the body doesn't normally have nicotine but you take a nicotine from a cigarette and it makes these nerve fibers fire as if your body was activating it by its own acetylcholine.

These receptors when they fire then work on other nerve cells that release other hormones and these other hormones have effects on mood and behavior.

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For example, dopamine is one that's talked about a lot. Dopamine is another hormone that is released when someone is experiencing something pleasurable so it's involved in the feeling of pleasure, feeling good. It also -- there are also other hormones involved. Adrenaline-type hormones that are involved in stimulation or activation. Hormones like serotonin which is involved in mood -- relief of depression, relief of anxiety. There's release of morphine-like hormones in the brain that have effects on mood and anxiety as well. Nicotine when it binds with a receptor activates a lot of hormone receptors that -- how a person feels so a person might be stimulated, relaxed. They might feel better when they're being stressed, whatever, so one thing nicotine does is it artificially stimulates nerve systems that are meant for the body's own hormones. That's part of what nicotine does and why people smoke.

Now, another thing that happens in smoking in particular is when there's stimulation over time -- say, if you're a regular smoker, the brain adapts -- and this is true for any drug that works on the brain. The brain doesn't like to have its function disturbed. It tries to get back to

normal functioning and to do that it changes its structure so there are changes in number of receptors. The receptor number goes up, but the receptors don't function as well so you have a situation where the brain structure is different and this can be shown with scanning tests and then the brain gets to the point where it needs nicotine not to stimulate more hormone or more dopamine but just to have a normal amount of dopamine and that's when a person becomes dependent upon nicotine for normal functioning.

If a person then stops smoking, then there is subnormal stimulation of dopamine or some other hormone. Then the body has a deficiency state, there's not enough hormone release, and then one feels the opposite of what happens when you first take nicotine. So instead of stimulation, you feel fatigued, you feel lethargic. You have no energy. Instead of concentrating better you can't concentrate. You can't focus. Instead of feeling less depressed, you feel more depressed. Instead of having less appetite, you have more appetite and you gain weight so one experiences withdrawal symptoms which are the opposite of nicotine when you first take it.

Smokers smoke for both those reasons. They smoke to deal with arousal issues to focus, to concentrate. They smoke to deal with stress, deal with depression, with their boredom, with loneliness and they also smoke because when they don't smoke they feel worse so they smoke to feel normal and it's a blend of those two things that makes a cigarette -- nicotine becomes part of a smoker's life. They smoke at various times whenever they're -- they need some tuning of their mood or need to focus or they feel bad.

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Q. Dr. Benowitz, have you brought today a demonstrative to help explain that better to the jury and the Court?
A. Yes.
Q. If you --
THE COURT: Your Honor --
THE COURT: You've seen this?
MS. ROOSEVELT: I'm sorry, Your Honor?
THE COURT: You all have copies of this?
MR. CLARK: Yes, Judge.
MR. KLOK: Your Honor, is it okay if Dr. Benowitz approaches the jury?

Dr. Benowitz, there's a stick right next to you.
THE COURT: Dr. Benowitz, I have a laser pen or the stick. Whichever you want to use.
THE WITNESS: That's fine.
(Pause.)
THE WITNESS: Thank you.
A. Well, this is a --
THE COURT: Excuse me. Are we all up? I'm not up.
MR. BIERSTEKER: Not yet.
MR. KLOK: It's not up yet, Your Honor.
A. It is a video that will show you some of the points that I just tried to explain to you.
This is a person smoking a cigarette and that's smoke going through the air passages and stop it here.
This is a -- these are the tar particles so it's water, it's tar and tar is like the stuff that you see at a barbecue. It's -- it's the matter that gets generated when you burn any kind of plant material and in these tar particles there are going to be little symbols that are used to show what nicotine -- that's nicotine there.

Go on. Okay. Stop.
These little primal things are what is being shown as nicotine. Nicotine's actually much smaller but so you understand what this is but it's drawn larger.
It's going down into the lungs, these particles, and it impacts or gets stuck in the lungs. Stop here.
So here's a tar particle that's stuck down into the inner air passages of the lung where normally air gets absorbed or oxygen gets absorbed and what you'll see is that nicotine passes from these tar particles through the blood vessel and goes to the bloodstream. This is the bloodstream of the lung.
Go on.
So the particles are going into the bloodstream and here's the same thing. This is the heart itself and the nicotine particles go into the heart and they go right out into the circulation, into the blood vessel. This is the blood vessel that's of the brain.

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Within 15 seconds of taking a puff of a cigarette nicotine goes from the cigarette, gets into the lung, gets absorbed through the blood

-N. Benowitz, M.D. - direct - Mr. Klok- 1470

vessels and gets to the brain and that's an important factor in understanding why tobacco smoking is so addictive because in general the faster a drug gets -- the faster a drug when you take it gets to the brain it intensifies the effect and the better you can control the dose because you can tell in ten seconds whether the dose is too small or too big and you can adjust your next puff and that's really the optimal situation for developing drug addiction.

This has been studied for cocaine. People who smoke cocaine get a faster effect, they get higher concentration, they control their dose and crack cocaine is the most addictive way of taking cocaine. Same way with smoking as compared to other forms of taking nicotine.

Go on. Okay. Stop.

This is -- these names just talk about different parts of the brain which I won't bother you with but I just want to point out the cortex is one part. That has to do with thinking and attention and arousal, and one thing people who are smokers say is that when you smoke a cigarette it helps you concentrate and think better.

The amygdala is part of the brain

-N. Benowitz, M.D. - direct - Mr. Klok- 1471

which deals with emotions and there are a lot of nicotine receptors there as well and people say when their mood is off they have a cigarette and their mood is better. It helps them feel better so those are two of the important areas when nicotine is working in a smoker.

Next. These are nerve cells firing. Stop here.

This is a neuron which is a nerve cell and when that neuron gets activated it fires and the signals go out which is called axons. The nerve signal goes out there and they go to a nerve ending and the nerve ending releases a hormone which causes some effect on this cell so this neuron might fire, the signal goes there, something that's released by the nerve ending and that turns on this cell. It communicates from one cell to another.

Next. That's another example of one cell firing.

Now, here's -- stop this.

This is the nerve ending itself and within the nerve ending are the hormones that I talked about. For example, dopamine might be in here and that gets released from this hormone. It works -- from this nerve ending it works on this

-N. Benowitz, M.D. - direct - Mr. Klok- 1472

neuron. It may be involved to make a person feel better, feel pleasure. This is another neuron which is acting on this neuron and this neuron controls how much dopamine gets released from this nerve ending so -- and you'll say nicotine might have an effect on this site to control how much dopamine is released here.

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Next. So here -- here -- stop this.
Now we're talking about not nicotine but this is the normal brain situation, nonsmoker. Acetylcholine is the body's hormone and this is the receptor, protein that's designed just to bind acetylcholine. The shape is such that this is like a lock part --
THE COURT: Is the Doctor's microphone on?
THE WITNESS: No, it's not.
THE COURT: Just wait one second, Doctor.
(Pause.)
A. So that's the hormone and that's the receptor and this little notch here is where the hormone will go when it binds and then the receptors is like a pore or channel so when you open this, it opens this up and then ions go through which then

cause the nerve to fire.
Go on.
That's the binding. Channel's opening. Sodium ions and calcium ions. And then that's causing this nerve to release dopamine and so it's little balls of hormones and this might be to say the normal level of release.
Here's a person smoking a cigarette and taking a nicotine and this would be someone who's not tolerant. This would be the initial effects of nicotine. There's nicotine in the bloodstream and it's binding -- nicotine is binding here to these receptors so instead of acetylcholine, nicotine is binding, the channel's opening and this is making more dopamine release than normal so you see much more than the normal amount of dopamine release so here you have a situation where a person would get more pleasure or stimulation than normal.
THE COURT: Doctor, can I just ask you, would you just place your back towards the podium where counsel is because, you know, that way you can speak to the jury, she can hear you and then that may be a little better.
THE WITNESS: Right. Okay.
A. Here is a situation with a lot of

nicotine and a huge amount of dopamine being released.
And you'll stop there. There have been a lot of studies on dopamine and what it does, and dopamine is actually released by every drug of abuse, heroin releases dopamine, cocaine does, amphetamines do, alcohol does and some of the things dopamine is associated with is pleasure, arousal, vigilance which means being alert.
Now, these are all normal functions. The brain's dopamine is meant to do this normally but when you take a drug it drives it more than normal in effect.
Okay. And you can stop it here.
These are some of the other hormones I talked about before and the other hormones play a role in relieving anxiety or depression, reducing hunger, reducing body weight so again nicotine is

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working by increasing a number of different hormones.

Go on. And here -- you can stop here.

As I mentioned before when you stop you get opposite effects and the most common is called withdrawal symptoms that people talk about which is when they don't have enough nicotine --

when they stop using nicotine and their hormone levels are deficient, they feel irritable, restless, drowsy, trouble concentrating, anxious, depressed, hungry, gain weight, sleep disturbance.

Here's what happens with tolerance. Now, there are more receptors in the brain than there were before so the brain structure has changed. And some of these receptors are not working properly so now you have lots of nicotine there but the brain's dopamine has now become normal because the brain adapted so even though there's lots of nicotine you go back to the normal amount of dopamine dependent on nicotine.

And here's what happens when all of a sudden there's no more nicotine so there's all -- all these receptors dependent on it. There's some acetylcholine but not enough to have normal functioning so now what you have is a deficiency state. It's not enough dopamine to feel normal. You just have a few little dopamines being released and here's where you start having withdrawal symptoms.

That's in brief a summary of what nicotine does to the brain in smoking.

THE COURT: You may resume your seat.

Thank you very much.

BY MR. KLOK:

Q. Dr. Benowitz, can you explain what drug addiction is?

A. Well, the essence of drug addiction is loss of control of a drug use which means when you want to quit it's difficult. The drug is a psychoactive drug meaning that it affects food or behavior, thinking, and that the drug is reinforcing which means that you're using the substance because of the effect of the drug so you're smoking cigarettes because there's nicotine there. You wouldn't smoke cigarette without nicotine. Nobody does. But the key essence of drug addiction is really loss of control of drug use.

Q. Dr. Benowitz, have there been various definitions of drug addiction over the years?

A. Yes.

Q. Can you tell me whether or not it was recognized in 1964 in the '64 Surgeon General's report that people smoked for nicotine as a primary reinforcer?

A. Yes.

Q. What does the term primary reinforcer mean when talking about substances?

A. Well, a reinforcer is something which when experienced makes you do the behavior again. You take a drug. You like it. You take it again

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because the drug is a reinforcer so reinforcer just means that it makes you do the thing again and again and again.

When you say nicotine is a primary reinforcer it means that people are smoking cigarettes because there's nicotine there and without nicotine they wouldn't smoke them.

Q. Does this definition include the loss of control element within it?

A. It may, yes.

Q. How did the U.S. Surgeon General report define cigarettes in the 1964 -- in the 1964 Surgeon General report?

MR. KLOK: And if you could, Gina, 50150, at Page 34, please.

THE COURT: Mr. Klok, we're looking at the Surgeon General's report?

MR. KLOK: Yes, Your Honor. We're looking at the Surgeon General report 1964.

THE COURT: Pending question is does the definition include the -- no. I'm sorry. How did the U.S. Surgeon General report define

cigarettes in 1964?

MR. KLOK: Yes, Your Honor.

A. Well, at that time tobacco smoking was characterized as habituation. Based on current definition you're separating compulsive drug use into habituation versus addiction.

Q. What is the distinction between habituation and distinction as used -- excuse me -- between addiction and habituation as used by the 1964 Surgeon General report?

A. Well, first of all, what it is not related to is loss of control of drug use. It's a compulsive use of a drug. It is based on a definition developed to look at heroin.

THE COURT: I'm sorry. Look at what?

THE WITNESS: Heroin.

THE COURT: Heroin. Okay.

A. Namely, that a person had to have compulsive use of a drug plus there had to be intoxication there, had to be severe and some time life-threatening withdrawal symptoms and there had to be an element of antisocial behavior so it's a harm to society associated, say, with criminality, of trying to get supply of a drug so, of course, nicotine is not intoxicating, it does have

withdrawal symptoms which can be quite disturbing. They weren't fully recognized. They were partially recognized but not fully in 1964 and, of course, cigarette smoking is not antisocial, it's not associated with criminality so based on those factors the Surgeon General determined that tobacco use even though it was driven by nicotine and was a compulsive behavior would be better classified as habituation.

Q. Now, Dr. Benowitz, are you familiar with the World Health Organization?

A. Yes.

Q. What is the World Health Organization?

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A. That's an organization that is -- that deals with health issues around the world. It's got members from countries all around the world and deals with health questions that have worldwide implications and one of the things they've been interested in is drug abuse, illicit drugs, and they have developed addiction -- definitions at various times of -- on addiction or compulsive drug use behaviors.

Q. Did they adopt a definition of drug addiction in 1965?

THE COURT: They?

MR. KLOK: The World Health Organization, Your Honor.

A. Yes. The Surgeon General's definition I just talked about was based on an earlier World Health Organization definition.

In 1964 actually they decided that the distinction between habituation and addiction was artificial and did not make sense if you're thinking about the compulsive use of the drug. Separating psychological versus physiological factors didn't make sense because psychological factors are driven by brain effects of drugs so they said in '64 published I think in '65 that we shouldn't separate them. We should make them all drug dependance of different sorts so they have drug dependance of the heroin type, drug dependance of the barbiturate type, et cetera, so they said we should call all drugs dependance and not make a distinction any more between addiction and habituation.

Q. Did the 1965 World Health Organization definition include consideration of tobacco or alcohol?

A. No. It was focused primarily on

illicit drugs and prescription drug abuse so it -- even though alcohol was known to be addicted it did not include alcohol and it did not include nicotine or tobacco either.

Q. Would that definition in your opinion, Doctor, have application to tobacco, the definition of the 1965 World Health Organization?

A. Yes. What -- what they basically said in '65 is that drug dependence is a behavioral pattern in which the use of a given psychoactive drug is given sharply higher priority over other behaviors which once had a significantly higher value which again to translate that it means that the use of a drug becomes paramount in a person's life and they have trouble controlling its use. That is absolutely relevant to tobacco back in '64 as it is today.

THE COURT: Mr. Klok, could we stop here for our morning break? How's that?

MR. KLOK: Yes.

THE COURT: Ladies and gentlemen, if you leave your notebooks down. Have Al bring you down. We'll see you back here 5 after, okay?

(At this time the jury leaves the Courtroom at 10:43 a.m.)

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THE COURT: Step down, Doctor.

Kim, Chris, Rhett I'd like to see you in chambers about the HIPPO report. Everybody else we're on 15 minutes.

MR. CLARK: Thank you, Judge.

(Recess taken at 10:43 a.m.)

(Court in session at 11:07 a.m.)

THE COURT: Oh, Al. I'm definitely ready.

(At this time the jury enters the Courtroom at 11:07 a.m.)

THE COURT: All right. Thank you very much. All be seated. Let's continue, please.

MR. KLOK: Thank you, Your Honor.

BY MR. KLOK:

Q. Dr. Benowitz, you had testified earlier today that you had worked on the 1988 Surgeon General's report. Is that correct?

A. Yes.

Q. Did the 1988 Surgeon General's report define drug dependence or addiction?

A. Yes.

Q. And I'm going to put on the ELMO with the Court's permission if I can approach --

A. Sure.

Q. -- what's listed as the criteria for drug dependence. Do you see that Dr. Benowitz?

A. Yes.

Q. Could you please explain that to the jury?

A. Well, first, let me say to make it clear that this report used the terms addiction and dependence interchangeably. We felt that they could be -- that they meant the same thing and could be used so this talks about drug dependence but it could say drug addiction, either one.

The -- it was felt that there were three main criteria -- and again these criteria were developed based on what would be a definition that would work for all of the known drugs that are dependents so the commonality is what -- really highly controlled or compulsive use which means trouble quitting when you choose to quit, psychoactive effects which means it works on the brain and affects thinking or behavior or mood, and drug-reinforced behavior which means that it's dependent on the drug as opposed to some process such as handling a cigarette or the smell of a cigarette.

There were other criteria that are

common with drugs of dependents. Stereotypic patterns which means using a drug in sort of a ritualized way which is true for many drugs including smoking used despite harmful effects which means if the drug is doing something bad to you you still keep on using it which is certainly true for smoking as well as other drugs. Relapse following abstinence and it's true for many drugs that even when a person quits successfully for a short period of time the relapse rate is quite high. 75 percent

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of smokers and heroin addicts and alcoholics six months later are using the drug again even after they quit for a short time.

Recurrent drug cravings means that when you stop using the drug you have cravings that can persist for a long time for that drug. These are all true for nicotine and tobacco. And then dependence-producing drugs also produce tolerance.

Tolerance means that once you've used a drug the effect of that drug on a subsequent use is less and that's true for nicotine as well as -- as all other drugs. Physical dependence as separated from dependence in general means that when you stop using a drug you have withdrawal symptoms and I talked about those before and those are --

have been well-studied now for nicotine and are also present for other drugs.

And the last one is pleasure or euphoria effects, and all drugs abused when taken people say they like them and that's common for them.

So we decided that these were the key criteria that define drug dependence for drugs in general and they certainly define dependence on nicotine.

Q. Is that definition in line with -- you had mentioned earlier with addiction and how you define it. Is this definition in line with your earlier-stated belief?

A. Yes.

Q. Dr. Benowitz, do the Surgeon General reports come out with major conclusions when they're printed out?

A. Yes.

Q. And in 1988 when you worked as senior editor did you come out with in the group you worked with with major conclusions?

A. Yes.

Q. I'm going to put it on the ELMO and if you could, Doctor, this is still the 1988 Surgeon

General report on Page 9 and if you could explain those major conclusions you worked up.

A. Well, the first is that cigarettes and other forms of tobacco are addictive and that was based on a huge body of research showing that when people became regular smokers they had great difficulty quitting despite compelling reasons, health reasons and others to do so.

The second was that nicotine is the drug in tobacco that causes addiction. This was based on the fact that no one smokes cigarettes without nicotine. That nicotine produces the same effects as smoking tobacco, that withdrawal symptoms that occur from stopping tobacco can be reproduced and give people nicotine and stop nicotine in the pure form, that people regulate their smoking to control nicotine intake and -- and the biological material I just explained. That was all reviewed in the report and it was quite clear that nicotine is what causes nicotine addiction.

The third conclusion was that the

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pharmacologic and behavioral processes that determine tobacco addiction are similar to those that determine addiction to drugs such as heroin and cocaine.

Now, this is one which needs to be explained a little bit.

We were not saying that nicotine is intoxicating the way heroin and cocaine is. What we were saying is that if you look at the strength of the dependence, how difficult it is to quit, relapse rates when you try to quit, that nicotine was just as strong a dependence as these other drugs. If you look at the biology, the chemistry that I talked about, the brain processes, it's very similar for nicotine, heroin and cocaine so there's a lot of commonalities.

In some respects nicotine actually looks more addictive than heroin and cocaine. Examples. If you look at the number of people who are smokers in general and who are dependent smokers, who smoke every day, more than ten cigarettes a day, that's about 85 percent of smokers. If you look at alcohol, alcohol can be addicting but only 20 percent of men who drink alcohol and only 5 percent of women who drink alcohol are addicted. Even if you look at heroin and cocaine, many more than 15 percent use heroin or cocaine occasionally at parties or just from time to time and are not daily users who are dependent so of

all the drugs that people get exposed to nicotine is the one that when you start using it you're most likely to become dependent.

Another line of argument is that if you do research, if you study people who are multiple drug users and most people who use heroin or alcohol, for example, are smokers, and you say which drug is the hardest to give up or if you observe them in treatment programs, cigarettes are identified as the hardest drug to give up by multiple drug users and drug users and alcoholics who stop using their drugs most of them keep on smoking for a long time so even though nicotine is not intoxicating by many of the criteria involved in drug dependence or addiction, nicotine is as or even more dependence-producing than heroin and cocaine.

Q. Dr. Benowitz, are there other methods of diagnosing addiction that you haven't talked about?

A. Well, these are criteria for addiction. There are ways to look at the presence of nicotine addiction within individual smokers and the two common ones, one is called the Fagerstrom.

THE COURT: Which you're definitely going to spell for us.

THE WITNESS: F-a-g-e-r-s-t-r-o-m.

A. Dependence questionnaire and the second one which is widely used is the -- what's called DSM IV, the Diagnostic Statistical Manual IV which is put out by the American Psychiatric Association.

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Q. Dr. Benowitz, do you think that the DSM IV adequately sets out testing criteria to define an addicted smoker?
A. No.
Q. And maybe to assist us if we could have Exhibit number 9016 up, please, on --
THE COURT: Is this DSM-4?
MR. KLOK: Yes, Your Honor.
Q. And Dr. Benowitz, who puts together the DSM IV criteria?
A. Well, this is a committee of the American Psychiatric Association.
Q. And what does DSM IV stand for? Is that an acronym?
A. Yes. Diagnostic Statistical Manual.
Q. Okay. If you could, Doctor, explain to me how this criteria is inadequate for an addicted smoker?
A. First of all, these criteria were

developed for substance dependence more in the model of heroin or alcohol so some of the questions relate more to behaviors that would be seen, say, with alcohol and heroin use.
For example -- and I'll go through some of these things one by one.
Tolerance which is talking here about either the need for markedly increased amounts of a substance to achieve effect or --
THE COURT: Could you leave that up because I'm having difficulty focusing on this so I'd appreciate it. It's very difficult to read, Mr. Klok, in the long form, okay?
Okay, Doctor. I just want everyone to read it when you go along, okay?
THE WITNESS: Okay.
A. Now, tolerance --
THE COURT: No.
THE WITNESS: Sorry.
THE COURT: Sorry. I want you to keep the blow-up so we can see it point by point because we cannot see them the other way. Okay.
I'm sorry again.
THE WITNESS: Okay.
A. Tolerance is something which is

common with drugs of abuse. For a smoker, every smoker develops tolerance when they begin. If you give a nonsmoker a pack of cigarettes they're going to be very sick. Smokers develop tolerance when they begin smoking and they typically increase the amount they smoke over about seven years and then they stay at a stable consumption level. Well, they're not increasing their dose over 12 months but they are very tolerant. That's clearly present so these criteria aren't really relevant to the smoker's tolerance which is as present as any other addicted drug.
Q. Okay. If we could move to the next criteria number two.
A. Well, two is certainly relevant for a smoker. This is a criteria which I think does -- does work. That's as relevant for a smoker as other

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drugs.
Q. Okay. If we could move to criteria number three.
A. Three is one that is generally not asked of smokers. This is more relevant, say, to alcohol when a person might, say, drink only one or two drinks per day and finds sometimes when they get going they binge. This is more relevant to binge

use. Well, smokers don't binge smoke but anyone who's tried to quit is obviously -- can't quit -- is smoking more than they want so this is a question that really develops from binge use of a drug, not smoking.
Q. Dr. Benowitz, before you proceed further have you written articles relating with -- to using DSM IV to adequately diagnose a smoker as addicted?
A. Yes. I wrote a review on nicotine addiction which looked at the different ways that nicotine addiction was diagnosed and I commented the same thing I'm doing now in that paper about what some of the limitations are of DSM IV and how the ideas behind this, the concepts are valid but the questions really need to be asked in a special way for smokers.
Q. And go ahead. Proceed, Dr. Benowitz, if you would to point number four.
A. Well, four is relevant to smoking as to the other drugs.
Five, a great deal of time is spent in activities necessary to obtain the substance. That is not so relevant. Generally it talks about chain smoking here but a lot of -- of this is more

like a heroin addict goes out and has to cop drugs a lot, spends a lot of time trying to get their drug. That's not relevant to most smokers. You just go out and buy it. It doesn't take a lot of time to get it.
Important social, occupational, recreational activities given up or reduced because of substance abuse is again not so relevant to smoking because it's not intoxicating. If you're drunk or intoxicating you can't work. Well, a smoker could work so for most cases this is not so relevant for smokers as it is for an intoxicating drug.
Seven is relevant; that a substance is used despite the knowledge of having a persistent or recurrent physical, psychological problem. Certainly many smokers do have health problems and keep on smoking. This is relevant.
Q. Dr. Benowitz, did you examine -- when examining this case did you in your opinion as an expert on nicotine addiction based on your review of all the information in this case, do you have an opinion within a reasonable degree of scientific certainty whether Connie Mehlman was addicted to smoking?

A. Yes.
Q. What is that opinion, Dr. Benowitz?

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A. Undoubtedly she was addicted.
Q. And what do you base that opinion on, Dr. Benowitz?
A. Well, I base that on the facts of her smoking history. She started smoking at 16 or 17 years old when she started smoking as an adolescent. Within a few years -- we don't know exactly how -- how long -- she was smoking between half a pack or a pack a day or perhaps more than a pack a day. This persisted for 20 years so she clearly was smoking a lot of cigarettes on a daily basis for a long time.
She had tried on several occasions to quit. Starting -- she began smoking in 1951. She tried quitting smoking in the early '60s. She did stop smoking when she was pregnant I believe in 1969 and then relapsed again right after she had her child or soon after and she tried quitting several times in the 1970s before she finally succeeded in 1974 so clearly she wanted to quit smoking. When she tried to quit she went to Smoke Enders, tried hypnosis so she went to -- considerable means to try to stop smoking which she had trouble doing.
She had asthma and it's likely that

her asthma was worsened by it, by smoking. I believe she was told about that and she still kept on smoking in spite of having asthma.
All of these factors -- and other -- the other thing is when she did quit smoking her husband's testimony was that she became irritable, she had -- get some of the wording.
(Pause.)
A. She had severe anxiety, she was irritable. Those are the main ones. And she was nervous.
Those are certainly consistent with withdrawal symptoms from stopping smoking.
So she had clearly a problem with drug use. She wanted to quit as early as the '60s. She made multiple attempts and she kept on smoking.
Q. Okay. In evaluating whether Connie Mehlman was addicted did you use the Fagerstrom dependent scale?
A. No.
Q. And why didn't you, Doctor?
A. Well, the Fagerstrom dependent scale requires detailed knowledge about daily smoking behavior; when you have your first cigarette in the day, your patterns of smoking throughout the day,

when you smoke and when you don't smoke, and that information was just not available from the records that I saw.
Q. Okay. Did you look at the DSM IV criteria and see whether or not Connie Mehlman fit the definition of addiction under the DSM IV criteria?
A. Yes.
Q. And if I could I'll put that criteria back up. Actually, you have that.
If you could, Doctor --
THE COURT: Sorry. We're not on.
MR. KLOK: No. That's not it. It's

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the previous one.
THE COURT: This is the conclusions. The one with the seven --
MR. KLOK: You actually had it on your computer. It's the DSM IV criteria -- that's it. Thank you.
Q. And if you could, Doctor, walk through those criteria again bearing in mind Connie Mehlman's situation and -- well, before we go further, how many of those criteria does a person need to satisfy to be considered substance dependent?

A. Three.
Q. And how many of those criteria do you think -- did you find in your review of the materials Connie Mehlman fit?
A. Five.
Q. Okay. If we could, Dr. Benowitz, could you tell the jury and the Court which one -- which five criteria Connie Mehlman met?
A. Tolerance she clearly met. Anyone who's smoking a half a pack or pack per day is clearly tolerant. As I said before if you're a nonsmoker you'd be deathly ill from that amount of nicotine.
There's also tolerance that occurs in smokers throughout the day every day. The first cigarette in the morning has got much more intense effects and the effects get less and less throughout the day. I don't know that for Connie Mehlman but that is well-documented for smokers who smoke many cigarettes in the day.
The second withdrawal, she had according to her husband experienced withdrawal symptoms and irritability, nervousness so she had withdrawal symptoms.
Substance taken in larger amounts

over time, she had tried to quit several times. She was not able to do that. She went back up to the amount that she was smoking, half a pack, pack a day.
The fourth one, persistent desire or unsuccessful efforts to control down use. That's evidenced by her several quit attempts and failure to quit.
A great deal of time spent on activities necessary to obtain a substance.
I don't have information about that. Sometimes one of the behaviors we look at here is if someone gets up at night to go out and buy cigarettes to make sure that they're there in the morning or goes to great lengths to insure they have a supply of cigarettes wherever they are. I just don't have a history on Connie Mehlman for that.
THE COURT: Excuse me. Mr. Haefele, just open the door in the back.
MR. HAEFELE: Yes, Your Honor.
THE COURT: Thank you.
A. The next one is important. Social, occupational or recreational activities given up or reduced. I don't have information on that.

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And the seventh one is the substance

use continued despite knowledge of having a persistent or recurrent physical or psychological problem.

I believe her smoking in spite of having asthma and being told that that made her asthma worse met that criteria so in my opinion she meets five of the seven criteria.

Q. In your opinion, Dr. Benowitz, if a person's addicted are they capable of making a free choice?

A. Well, it's a complicated question.

The answer is yes and no.

Q. And please explain that if you could.

A. Well, the smoker clearly has normal mental functioning. A person -- a smoker can understand what's going on, they can think without impairment.

The issue is what motivates a choice that they make and the choice is determined by a balance of factors. I mentioned this briefly before.

There are some factors that would influence a person to keep on smoking and some factors that would influence a person to stop smoking.

The factors that influence a person to keep on smoking include the impact of nicotine addiction such that they're smoking to deal with arousal, to get stimulated when they need it, to focus on their job, to deal with stress, to deal with depression. Those are all factors that are nicotine-related that become very important in a person's life.

A smoker -- if you think of each puff of cigarette as a dose, a smoker is exposing himself to thousands and thousands of doses of a psychoactive drug throughout their career and they get used to having that nicotine available so that's the addiction side.

There's also aspects of pleasure from smoking cigarettes, feel, taste and smell, which smokers say they enjoy. Now, it turns out those are linked to nicotine because if you take nicotine away smokers won't smoke cigarettes any more so even though there are physical handling and sensory parts of it that's all linked to nicotine as well so those are the reasons why someone would want to keep on smoking.

The reasons why one stops smoking would be health concerns. It might be that their

family's asking them to quit smoking. It might be because of the economics because cigarettes cost a lot of money. Those factors are weighed against the addiction and so when a person decides is the weight of those factors and many people say, I want to quit smoking, but the addiction factors are stronger and a person may try eventually to quit but it might take many attempts. In fact, on average it takes people four or five quit attempts over many years

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before they're successful.
Q. When Connie Mehlman -- and I think you already testified that she attempted to quit some time in the early to mid-'60s and finally succeeded in 1974 with various attempts in between, is that uncommon for an addicted smoker?
A. No. That's quite a common pattern to have recurrent attempts. What often happens, someone tries to quit. They fail. They get discouraged. Then they get motivated again. They try to quit again and they often fail again and they try something different, different technique or something happens to their lives that changes the balance. Eventually they quit. Most smokers do eventually quit but it takes many years.
Q. There was also a mention -- you made

mention of Connie Mehlman being pregnant and quitting while -- during her pregnancy and then resuming smoking. Is that an uncommon phenomenon, Dr. Benowitz?
A. No. Unfortunately that is very common. During pregnancy a couple of things happen.
One is that sometimes the experience of smoking cigarettes, taste, some of those things change so women often change the amount they smoke.
Second thing which is an obvious factor is that women learn that smoking is bad for their baby and that often motivates women to quit smoking during pregnancy.
The unfortunate part is that most women relapse after the baby's born. About two-thirds of women who are smokers during pregnancy quit during pregnancy, relapse and that is because of stress, fatigue, of depression. All the things that smokers have learned to use nicotine for become very strong signals or prompts to start smoking so relapse is very common.
Q. Dr. Benowitz, do you know when the 2001 Surgeon General report came out?
A. It came out two weeks ago about.
MR. KLOK: And if we could have 50744

at Page 8.
Your Honor, this is the 2001 Surgeon General report.
Q. Which addresses the very issue I think you've been talking about, Dr. Benowitz, and we discussed earlier about the Surgeon General's reports, major conclusions in the reports, correct?
A. Yes.
Q. And I'm going to point your attention to one of several major conclusions in 2001. Does this portion illustrate what you were just talking about?
A. This is exactly the point I just made.
Q. And, Dr. Benowitz, would you please read that to the jury?
THE COURT: Sorry. What page are we at?
MR. KLOK: Page 8, Your Honor.
THE COURT: Page 8. 8 into?

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MR. KLOK: Into the 2001 Surgeon General's report.

THE COURT: Okay. Thank you.

A. Smoking during pregnancy remains a major public health problem despite increased

knowledge of the adverse health effects of smoking during pregnancy. Although the --

Q. Are you having problem reading that? I'm sorry.

A. -- of smoking during pregnancy has declined steadily in recent years substantial numbers of pregnant women continue to smoke and only about one-third of women who stop smoking during pregnancy are still abstinent one year after delivery.

Q. Dr. Benowitz, do smokers self-regulate their intake of nicotine?

A. Yes.

Q. And how do they do that, Dr. Benowitz?

A. Well, for the reasons I talked about before, smokers tend to smoke in patterns and they tend to use nicotine to help stimulate themselves in the morning like coffee, to help focus on their job throughout the day or their tasks, to deal with stress throughout the day, to relax in the evening -- to relax at night. There's multiple effects that I talked about before. And this translates into a person taking in a certain amount of nicotine in the day and most smokers take in about the same amount

of nicotine day after day after day.

Studies have shown including several of my own that if you, say, change a smoking product -- if you give a person a different cigarette with a different machine-tested yield the smoker will change their smoking behavior, take more puffs or bigger puffs or whatever to take in about the same amount of nicotine so the evidence is that people have a desired level of nicotine, that they will modify their behavior with different cigarettes that -- to make sure they get day after day and a particular amount of nicotine per cigarette as well.

On average, smokers like to get in about a milligram of nicotine per cigarette.

Q. And, Dr. Benowitz, is that called smoker titration or smoker compensation?

A. Yes. The idea that a smoker will adjust their smoking behavior to take in the same amount of nicotine day-to-day is what's called titration.

Compensation refers to what they do -- say, if they get switched to a different cigarette. If you can switch from a higher machine-yield cigarette to a low yield cigarette compensation means a smoker will take bigger puffs, more puffs,

more frequent puffs or smoke more cigarettes or some combination.

Q. Have you seen industry documents that reflect the phenomenon of smoker compensation?

A. Yes.

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MR. KLOK: And if we could have 8791, please.

Q. Doctor, is this a document that you recognize?

A. Yes.

Q. And who made -- who published this document, Doctor, if you know?

A. I think it was Mr. Wakeham.

Q. Okay. And if we could focus on the document itself. Doctor, could you read that to the jury and explain what that portion shows in terms of nicotine and smoker's compensation?

A. Okay. The cigarettes which are now growing, the Marlboro, Winston, Salem, Camel and Pall Mall, are all delivering approximately 30 milligrams of TPM -- which is tar -- or more with about -- I can't read this exactly. I think 6 percent nicotine content.

THE COURT: Is there a stipulation on that? What the document says?

MR. MICHIE: Yes, Your Honor.

THE COURT: Is it 6 percent?

MR. PATRICK: 6 percent.

THE COURT: Okay. Thank you. Go ahead, Doctor.

A. As we know all too often the smoker who switches to a high fi cigarette --

Q. Doctor, if I could. What does high fi mean?

A. They're talking about the newer cigarettes at this time, cigarettes that are supposed to have lower tar and nicotine.

-- winds up smoking more units in order to provide themselves with the same delivery which he had before. In short, I don't believe the smoking pattern has changed much even with the cancer scares and filter cigarettes.

Q. And, Doctor, do you know what date --

MR. KLOK: If we could go to the date.

Q. -- when this document was published?

A. This was published March 24th, 1961.

Q. What does that portion that you just read mean to you as an expert in nicotine pharmacology?

A. Well, this represents a statement of the nicotine titration and compensation concepts. It represents an understanding that people are smoking for nicotine, it represents that when someone is presented with a cigarette with a lower potential yield that they will titrate to get the amount of nicotine they want and they'll do that by compensating, by taking -- by smoking more cigarettes.

Q. Dr. Benowitz, in your opinion as an expert does this document constitute evidence; that is, Philip Morris was aware that people smoked for nicotine as early as 1961?

A. Yes.

Q. Doctor, are there other ways in which a tobacco manufacturer can adjust the level of

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nicotine in cigarettes?
A. There are a number of ways that the level of nicotine can be adjusted.
Q. And what are those ways that you're aware of, Dr. Benowitz?
A. Well, first I need just to orient the jury about the composition of cigarettes.
They're made by blending different types of tobacco leaves and then also using what's

called reconstituted tobacco. Reconstituted tobacco is made where you take sort of scraps of tobacco. Scrap leaves, stems, things like that, chop them up, extract out nicotine and other tobacco flavors, make the chopped-up bits into a paper just like you're making any other kind of paper, say, from wood pulp. Then shred the paper up into small strips that would look like tobacco strips, like chopped tobacco, re-add the nicotine and flavorings to it and then mix that with the final tobacco blend.
Well, the nicotine in the cigarette can be controlled by choosing what blends of tobacco leaves to put in. You can choose leaves that have higher nicotine levels or lower nicotine levels.
In the reconstituted tobacco product you can add in -- add back different amounts of nicotine because you extract it out first and then re-add it so by blending of tobacco and by controlling nicotine in the reconstituted tobacco the cigarette can be produced with any level of nicotine that a manufacturer wants.
Q. Dr. Benowitz, have you seen industry documents that indicate that the industry was aware of how to manipulate nicotine in the manufacturing process?

A. Yes.
MR. KLOK: If we could document 7578.
Q. Is this a document that you recognize, Dr. Benowitz?
A. Yes.
Q. Who wrote that document?
A. Mr. Teague.
Q. Do you know --
A. Claude Teague.
Q. I'm sorry. Dr. Benowitz, do you know who Mr. Claude Teague was?
A. He was a scientist at R.J. Reynolds.
Q. Okay. If we could to Page 9.
Doctor, I'm going to read this to you and ask you to explain to me how this portion is of significance for an expert in nicotine addiction; to you specifically, Dr. Benowitz.
Study means for enhancing nicotine satisfaction via synergists alteration of Ph or other means to minimize dose level and maximize desired effects.
What is he referring to -- what does that mean to you, Dr. Benowitz?
A. Well, this is sort of setting out what Mr. Teague or Dr. Teague thought should be done

to optimize the products. It deals with the concept

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that people are smoking for nicotine and nicotine satisfaction. It deals with a concept of trying to reduce nicotine levels because of the public perception that nicotine was bad for you or somehow harmful but to minimize nicotine levels at the same time that people would still keep -- would get enough nicotine to keep on smoking the products and so there's talk about synergists which are other drugs that might be added that might enhance nicotine effect.

Alteration of Ph which was thought by R.J. Reynolds was a way to increase the impact of nicotine or other means such that --

THE COURT: Miss Roosevelt, you rise for what reason?

MS. ROOSEVELT: Yes, Your Honor. Objection. Pretrial --

THE COURT: Objection. Okay. Objection regarding the document, the testimony? What?

MS. ROOSEVELT: The testimony per your pretrial ruling concerning this document.

THE COURT: Okay. Counsel should see me at side bar. I'll be right back.

(The following takes place at side bar:

MS. ROOSEVELT: Your Honor --

THE COURT: Elucidate me, Kim.

MS. ROOSEVELT: This is one of the Teague blue sky memos that we talked about before the trial. You had ruled that these could be only used to be admitted as Mr. Teague's personal notes. They cannot be used as the company's position. Prior to using it Mr. Klok said, Are they documents of the tobacco industry that reflect the company could have manipulated nicotine. Certainly that was a violation of the pretrial ruling and I think the testimony now is getting into what Reynolds knew or could not do and that violates the pretrial order.

MR. KLOK: Your Honor, I think I asked him whether RJ scientists thought about nicotine manipulation.

THE COURT: That's not the issue. We had a pretrial ruling about the blue sky documents, right?

MR. KLOK: Correct. It was in his individual capacity whether he opined --

THE COURT: This witness has just offered to infer that this document was the position

of counsel's client. That's the part you object to, right?

MS. ROOSEVELT: Yes, Your Honor.

THE COURT: It's an unsolicited response to your particular question, okay? You didn't say, Was this RJR's document? You said it was Teague's document. Stop him here. Rephrase him and get him back on track.

MR. KLOK: All right.

THE COURT: Listen. It's twelve o'clock. Can you go -- can you finish by a quarter of -- I don't think you're going to finish the

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witness. It's up to you. Can you finish the witness by a quarter after?

Just keep your eye on the categories.

MR. KLOK: Thank you, Your Honor.

(The following takes place in open Court:)

THE COURT: Rephrase.

BY MR. KLOK:

Q. Dr. Benowitz, is this document indicative of what Mr. Teague, the scientist for R.J. Reynolds, believed was a way of manipulating nicotine in cigarettes?

A. Manipulating nicotine effects in

cigarette, yes.

Q. If we could later on in the same document --

MR. KLOK: If we could blank that out just for a second.

Q. Dr. Benowitz, what's a minimum threshold level of nicotine? What does that mean?

A. The idea in minimum threshold level is that smokers will smoke cigarettes that deliver a certain amount of nicotine but not less than that. If there's less than that they won't be satisfied so the idea is -- and this is discussed in a number of tobacco industry documents -- is what is a level that would provide enough nicotine so a smoker would be satisfied.

Q. Have you seen documents written by scientists in the tobacco companies that talk about minimum threshold levels of nicotine?

A. Yes.

MR. KLOK: If we could, this is that same Teague document.

Q. I'm going to ask you a very specific question, Doctor.

THE COURT: At Page 4?

MR. KLOK: I think that's Page 4.

Correct, Your Honor.

Q. Let me read it to you first.

We may survey the market and conclude that the current cigarette products delivering about 1.3 milligrams of nicotine appear to satisfy the typical smoker. This somewhat crudely establishes a target dosage level for the design of new products.

Do you see that?

A. Yes.

Q. Dr. Benowitz, is this comment by Mr. Teague, an RJR scientist, does that reflect that there's an understanding by him of an underlying level of nicotine for -- that should be provided to smokers for satisfaction?

A. Yes.

Q. Why is that important, Doctor?

A. It reflects the understanding that people smoking cigarettes with nicotine, that they need a given dose of nicotine to maintain smoking behavior. It's not just something that people are smoking for taste or because they like to hold a cigarette. This is a statement of a drug dose that is sought by people who use the drug.

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MR. KLOK: If we could, 12903.
Q. Doctor, I'm going to show you a

document from Philip Morris and ask you to comment on how -- what this document means, what this portion means to you as a pharmacologist, an expert in pharmacology of nicotine.
And it begins -- this is a memo from Philip Morris, May 24th, 1972 and it begins, A widely-held theory holds that most people smoke for the narcotic effect, relaxing sedative that comes from the nicotine. The taste comes from the tar/ particulate matter delivered. Although more people talk about taste it is likely that the greater members smoke for the narcotic -- narcotic value that comes from nicotine.
Dr. Benowitz, what does this document show?
A. Well, this shows an understanding by the author that people are using cigarettes or using cigarettes to get nicotine and using nicotine to affect mood and behavior. Here they're focusing on relaxing sedative effects but it's understood that why people value cigarettes is not because of the taste but it's because of the nicotine.
Q. Dr. Benowitz, there are many who say that nicotine is more comparable to caffeine than other drugs of dependence. What is your response to

that analogy?
A. It's not at all like that.
Nicotine is more like a -- more hard-core addicting drugs. Not -- again, not in intoxication. It's clearly not intoxicating but in terms of dependence, it's much more like the hard-core addicting drugs than like caffeine and producing dependence.
Q. Have you done any research on caffeine, Dr. Benowitz?
A. Yes.
Q. What kind of research have you done on caffeine?
A. I did a lot of work studying the interaction between smoking and caffeine, coffee use, the effects of smoking on -- on what caffeine does to people, how the body handles caffeine, how smokers and nonsmokers handle caffeine differently.
Q. Have you supported the idea that food that contains caffeine should be labeled with a caffeine content?
A. Yes.
Q. Why?
A. Well, this was an initiative that was raised dealing with food information to the consumer

and I personally believe just like I think that all foods that have salt in them should tell the consumer how much salt because if someone wants to be on a low salt diet they should be able to choose foods by knowing how much salt is in their foods.
Well, a lot of foods contain caffeine. Sodas clearly do, some other sorts of food have caffeine in them as well and I think that

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a consumer who is interested in controlling their caffeine use or knowing how much caffeine they're taking or know how much caffeine their children are taking have the right to know is there 20 milligrams in this bottle of cola or is there 60 milligrams? That I think is just a fundamental right of a consumer to have that knowledge. That's my opinion. Just like for any other food component.

MR. KLOK: If we could 9508, Page 1, please.

Q. Doctor, I'm going to read to you a document from R.J. Reynolds which is dated December 1, 1982. Is this a document that you recognize?

A. Yes.

Q. I'm going to read two portions of this to you and then ask you a question.

First portion says: Most of those

who have smoked for any significant time would like to stop.

THE COURT: Now reading on Page 2?

MR. KLOK: We're now reading on Page 2.

Q. Is that correct? However, we cannot ever be comfortable selling a product which most of our customers would stop using if they could. That is to say, if the exit game (sic) from our market should suddenly open we could be out of business almost overnight.

Dr. Benowitz, as a pharmacologist and expert in nicotine addiction what do you interpret this document to say?

A. Well, the first part is what I talked about before. Once someone becomes a regular smoker the vast majority have great difficulty quitting and -- I didn't say this but a number of surveys done by the CDC, other national agencies, indicate about 70 percent of smokers want to quit and so the first part reflects that.

The second part, the exit gate means quitting. Now, what this basically says is if people were easily able to quit or in some way for most smokers who wanted to quit that would be the end of the tobacco business. That's what this

statement basically translates to in terms of medical terms.

Q. Doctor, what characteristics typify a smoker who successfully quits smoking?

A. Well, that's a complicated question because smokers are different. Clearly a person who quits smoking has got to be motivated to quit smoking. A lot of what I do as a physician is try to motivate smokers. They need to understand the risks of smoking and I try to explain to them what the risks are and try to get them to understand those risks. They need to understand the benefits of not smoking which can be health effects, they can be beneficial effects for their family, they can be economic effects. And often many smokers need help. They need help with medications, counseling sometimes so it depends from smoker to smoker but those are some of the issues that are important for smokers to quit.

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Q. Did Connie Mehlman successfully quit smoking?
A. Yes.
Q. What types of -- talking about an addicted smoker, what types of information does a smoker use to enable his addiction?

A. Well, the smoker like all drug-addicted people are balancing the addiction versus the reasons not to smoke and the reasons not to smoke include family pressure, economics and their understanding of the risks.

Understanding the risks is -- is a big issue because smokers don't understand the risks as it applies to them. That's a big problem with getting smokers to quit. They -- they understand the risk often in the abstract but smokers say, This doesn't apply to me. I'm not going to get sick or if I keep on smoking or it's okay for me to keep smoking until I start feeling sick and then I'll quit because then I'll be okay which unfortunately doesn't work because sudden death occurs as a first presentation of smoking or cancer develops and it's too late to do anything about it. Chronic lung disease. It's too late for your symptoms but many smokers say, Well, as long as I'm feeling okay I can keep on smoking or they say, If I don't smoke too much. Smoking is bad but it's only bad if I smoke too many cigarettes so if I don't smoke and I'm not smoking too much, therefore, the risks are not so bad for me. So most smokers actually are struggling all the time with the question of, How bad is this

for my health, and I have to rationalize it.

Smokers are not suicidal. Most smokers would not choose a one in two chance of dying prematurely, an average of seven years off life, a one in eight of developing cancer. Those are not choices that a person would not normally make so what smokers tend to do is minimize those risks for themselves. They -- for themselves they say it's not a problem for them.

Q. Dr. Benowitz, when in your opinion as an expert should the tobacco companies based on the information available and the scientific literature been on notice that nicotine as found in cigarettes is addictive?

MR. CLARK: Objection, Your Honor. I don't think this is -- scope.

THE COURT: No. Overruled.

A. I think that in the 1950s or at the earliest in 1960 or 1961.
Q. And on what do you base your opinion, Doctor?
A. I base that on the published research that was available on the role of nicotine and smoking and there were a number of papers published, some key papers published in the 1940s and a number

of papers summarized in a 1961 encyclopedic textbook by Larson and Silvette and I can explain more about why if you'd like.
Q. Let me show you an article, AN --

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THE COURT: Miss Roosevelt, do you have something to say?
MS. ROOSEVELT: Objection, Your Honor.
THE COURT: Thank you.
New question.
Q. Dr. Benowitz, are you familiar with a Lancet article that was published in the 1940s by Lenox M. Johnston?
A. Yes.
Q. Is that one of the articles upon which you -- your opinion relies?
A. Yes.
Q. Could we put up AN 776, please. No. AN 776. Is that -- that's it? I'm sorry. Then AN 914. Excuse me. I apologize.
And what's the date of that article, Doctor?
A. December 1942.
Q. Okay. If we could turn to the article.
Why was this article significant to put the tobacco companies on notice about nicotine

addiction, Dr. Benowitz?
A. Well, this was a really key study where Dr. Johnston began to compare the effects of pure nicotine to effects of smoking so he injected doses of nicotine, different doses into smokers to find out what they experienced and figured out that injecting someone with about a milligram of nicotine would produce the same sorts of effects on smokers that a cigarette produced in them and it turned out a milligram is about the dose that most people take in in a typical cigarette.
He also showed tolerance. He showed that if you give a dose of nicotine to a nonsmoker they get sick. It's very unpleasant. If you give the same dose of nicotine to a smoker they find it to be pleasant. It's like smoking their cigarette.
He also showed that withdrawal symptoms occur to nicotine not just missing your cigarette. He showed that with repeated doses of nicotine if you then stopped the nicotine -- this is nicotine injection -- that people developed withdrawal symptoms that are the same as when they were stopping smoking tobacco.
He also showed that injections of nicotine reduced the urge to smoke a cigarette for

awhile so this was the first study really comparing the effects of pure nicotine to those of tobacco and suggesting that nicotine is a critical factor of why people smoke cigarettes.
Q. And what is the journal that was -- what was it? What was the name of that journal?
A. Lancet.
Q. What is the Lancet?
A. That is a prominent English journal that's one of the top three or four journals in the world. It's a very widely-quoted journal. It was -- has been published for many years.
Q. You had mentioned the book entitled Tobacco as part of the basis for your opinion. Is that correct, Dr. Benowitz?

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A. Yes.
MR. KLOK: If we could have AN 776.
Q. When was that book published?
A. It was published in 1961.
Q. And do you know whether or not that book was partially funded by the Tobacco Industry Research Committee?
A. I believe it was.
THE COURT: Sorry. Do we have a document number on this?

MR. KLOK: Yes. It's AN 776, Your Honor.
THE COURT: Thank you.
Q. Do you know whether or not -- I'm sorry. I lost my train of thought.
What was the Tobacco Industry Research Committee?
A. That was a group that was supported by major tobacco manufacturers that had a research support mission so that they would fund research related to tobacco.
MR. KLOK: If we could go to Page 526, please.
Q. What did -- what was found inside the book Tobacco that you support your opinion upon, Dr. Benowitz?
A. Well, first let me say this book is a review of the literature that was published. Most of the articles far predate 1961. They were published in the '30s, '40s, '50s.
There is a chapter that deals with the question of habituation-related issues of tobacco and in this chapter they review a number of articles that talk about the pharmacology of nicotine so it talks about what nicotine does to

nerve cells, what nicotine does to the brain, what nicotine does to hormone systems. It documents tolerance to nicotine both in animals and people. It reviews the human studies, the studies like the Johnson study.
There was a second key study by Finnigan that raised the issue of smoking compensation so it talked about a number of studies suggesting that nicotine was important for human smoking.
It reviewed a number of studies on withdrawal symptoms, what smokers experience when they quit smoking. It reviewed a number of studies on the difficulty of quitting. It reviewed a lot of the approaches of helping people quit smoking ranging from Alcoholics Anonymous programs to a whole slew of different drugs and herbal treatments and hypnosis and it makes -- made a statement -- it's like this one which addressed the fact that there were a lot of authors who thought that tobacco use was an addiction. It was a -- it was self-administration of nicotine that people were addicted or habituated to nicotine and that's why people smoked.
MR. KLOK: Your Honor, I'm at a good

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breaking point now.
THE COURT: Very well. We'll stop here.
Al, would you take these good people down.
Folks, let's have you back and ready to go in the box by quarter of, okay? Not quarter of this. Quarter of the hour. Don't get worried, okay? All right.
(At this time the jury leaves the Courtroom at 12:14 p.m.)
THE COURT: Doctor, just step down, please.
All right. Thank you very much. We're in luncheon recess.
I just remind counsel if you make an objection just don't be shy, okay, because sometimes I'm reading or I'm watching the screen and if I don't peripherally catch you I don't want you to be up there and just waiting for me. Just get up and yell objection -- politely but nicely, all right? All right.
Everyone have a good lunch. We'll see you.
(Luncheon recess taken at 12:15 p.m.)

(The jury enters the courtroom.)
THE COURT: If this is a test, I know Ms. Manning is missing.
Have a seat please, ladies and gentlemen.
I think we lived this at the beginning of the trial, also.
You won't be able to see the screen from the end seat, that's why I moved everybody over.
(The last juror enters.)
THE COURT: I wasn't starting without anybody. I have everybody's name.
Let's continue please.
MR. KLOK: Thank you, your Honor. I'll try to do better with the mike this afternoon.

DIRECT EXAMINATION CONT. BY MR. KLOK:
Q. Dr. Benowitz, do you remember when we spoke to you at first this morning you talked about the textbook you had -- that was published in a publication by Mr. Melmon?
A. By Dr. Melmon, yes.
Q. And is that the same Dr. Melmon as the plaintiff in this case?

A. No. It's a different Dr. Melmon.
Q. Just before lunch, if you recall, Dr. Benowitz, we were talking about the companies should have warned sometime in the late '50s and early '60s. Do you recall that?
A. Yes.
Q. Dr. Benowitz, in your opinion from a public health perspective, how should the companies have warned in the late 1950s, and no later than 1961 about the dangers of nicotine?
A. How or why? What's the question?

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Q. How, Dr. Benowitz.
A. Well, at that time it was known or there was enough information to make one suspect pretty strongly that nicotine was responsible for why people smoked cigarettes and had trouble quitting smoking. There was still some debate about the terms of addiction versus habituation, but there was a lot of evidence suggesting that there was compulsive use that was nicotine-driven.
One could have said at that time, and I think should have been said, that tobacco contains nicotine. Nicotine is a dependence producing substance which makes smoking difficult to quit. There was enough information available to make that

statement in the 1950s.
Q. When in your opinion was Connie Mehlman addicted to smoking?
A. Well, I can't tell for sure. On average, from the time a person starts smoking to the time one becomes addicted is about three years. So if she started in 1951, I would say if she was a typical smoker, and I have no reason to think she wasn't -- that she was addicted by 1954.
Q. We talked earlier about the difficulty in quitting, do you remember that, Dr. Benowitz?
A. Yes.
Q. Is there any difference between individuals on how difficult it is to quit smoking?
A. Yes.
Q. And why is that?
A. Well, we don't fully understand it, but it is known for nicotine and also for other drugs of abuse, as well, some people are able to quit without much of a problem, without much withdrawal symptoms, without relapsing. Those people are very fortunate. Most people have difficulty quitting. It's very disruptive to their lives when they try to quit. Most people it takes

multiple quit attempts to quit.
Research done in recent years suggests that a lot of that has to do with genetics. In other words, people are born with different types of nicotine receptors, different amounts of dopamine release. There's an association with personality characteristics like depression. We know that people who have depression problems become more addicted, have more trouble quitting.
So there's a profile that just recently we're beginning to develop that is helping us understand why -- why some people have a very hard time quitting. Some people looks like can never quit, and for those people actually public health is talking about things like nicotine maintenance medications, so giving them nicotine to take without tobacco toxins because there is dependence on nicotine and they can't quit nicotine.
As I say, there is a difference. There are even some smokers, about 15 percent who appear not to be addicted. They smoke occasionally. They tend to smoke five or fewer cigarettes a day

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when they do smoke. They don't smoke every day and they have a much easier time quitting. Even for that population, there's evidence that that is

substantially genetic. So that your genes determine not only whether you become addicted or not, but even how much you smoke cigarettes.

So there are a lot of individuals who have more of a vulnerability. Unfortunately, for most people, when they become smokers they have trouble quitting.

Q. Dr. Benowitz, do you have an expert opinion within a reasonable degree of scientific certainty whether the warning you suggested would have had an impact on Connie Mehlman's quitting?

A. I think it would have enhanced the likelihood she would have quit sooner.

Q. On average, Dr. Benowitz, how many quit attempts does it take for a person to quit smoking?

A. On average, four to five.

Q. You had testified earlier that you worked on the 1988 Surgeon General's report as a scientific editor; is that correct?

A. Yes.

Q. What was the industry's position toward the 1988 Surgeon General's report?

A. Their position was that nicotine is not addictive. That people quit all the time, and

they can do so if they decide to quit.

Q. At that point in time, was there scientific consensus that nicotine and cigarettes was addictive?

A. Well, there was general scientific consensus that by the time we developed the report, and certainly afterwards, all of the major public health organizations released statements confirming that they thought nicotine was addictive.

Q. Dr. Benowitz, are you familiar with the pamphlets on "Tobacco Issues and Answers?"

A. Yes.

Q. Could we, if you would, 33954. Do you recognize that document, Dr. Benowitz?

A. Yes.

Q. Could you explain what that document was?

A. Well, it's -- it's a document that posed and answered a number of questions related to tobacco use.

Q. If we could turn -- if you can enhance that highlighted portion, please. Doctor, I'll read you this portion and ask you for your reaction as a nicotine pharmacologist and also as a person in public health. "Those who term smoking an

addiction do so for ideological, not scientific reasons. Former Surgeon General C. Everett Koop who branded nicotine an addictive substance as part of his anti-smoking campaign also said video games are addictive."

Dr. Benowitz, do you have an opinion about that statement?

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A. Yes.
Q. What is it?
A. The addiction issue is based on the science of compulsive use, the science of the biology of nicotine in the brain, on the comparison with other addictive drugs. It was based on a serious public health concern that people were using a substance that was injuring them, and when they started using it they couldn't quit. So I think that there is good scientific reason to use the term addiction.

Now, I don't have any knowledge of Dr. Koop's opinions about video games.

Q. If we could turn to 1562 at page 5. Dr. Benowitz -- leave it blank for a second.

Dr. Benowitz, are you familiar with a document by Bill Dunn or a document -- any documents by Phillip Morris that was written by Bill Dunn?

A. Yes.
Q. Who is Bill Dunn?
A. William Dunn was a behavioral scientist for Phillip Morris.
Q. Doctor, is this a document that you can identify? The first page?

THE COURT: Could we not publish yet? Don't publish it yet. I want to see the document internally.

Publish the document for the court and the lawyers only.

MR. KLOK: Dr. Benowitz, can you see it?

THE WITNESS: Not at the moment.

THE COURT: No, wait. I have it blanked out. Did you move?

MR. CLARK: No, Judge.

THE COURT: I apologize. I thought you were questioning the document. That's why I didn't have it published.

MR. CLARK: No. I apologize if I indicated that.

THE COURT: I apologize too. Okay, publish.

Q. Dr. Benowitz, are you familiar with

the document called "Motives and Incentives of Cigarette Smoking" by William Dunn, Jr.?
A. Yes.
Q. Do you know when the date of publication of this document was?
A. Well, this was from a talk given by Dr. Dunn at a conference in 1972.
Q. Okay. And do you know what Dr. Dunn's position was at Phillip Morris.
A. He was a behavioral scientist. I don't know exactly what his title was, but he did work relating to smoking behavior.
Q. Okay. If we could, page 5, please and if you could...

Dr. Benowitz, I'm going to read this to you and then ask you as a behavioral -- not behavioral, as a pharmacologist in nicotine addiction what your opinion is of this.

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Dr. Dunn wrote, "Cigarettes should be conceived not as a product but as a package. The product is nicotine. The cigarette is but one of many package layers. There is the carton which contains the pack, which contains the cigarette, which contains the smoke. The smoke is the final package. The smoker must strip of all these

packages layers to get to that which he seeks." Then later on it says, "Think of the cigarette pack as a storage container for a day's supply of nicotine."

Dr. Benowitz, what does this document show?

A. Well, this is basically -- it's pharmaceutical type language. It's saying that the product that is being marketed with cigarettes is nicotine, and that the cigarette is the way that people get nicotine. That's the way we package nicotine, but what we're really selling is nicotine.

MR. KLOK: Thank you, Dr. Benowitz. I have no further questions, your Honor. I tender the witness.

THE COURT: Thank you very much.

Cross-examine.

MR. CLARK: Thank you, your Honor.

CROSS-EXAMINATION BY MR. CLARK.

Q. Good afternoon, Doctor.

A. Good afternoon.

Q. My name is Bruce Clark.

THE COURT: And you're definitely going to put on the microphone.

MR. CLARK: I will put on the microphone, Judge.

THE COURT: I have all fans mikes here, folks, so if you have a problem hearing, you let me know.

MR. CLARK: Is this volume better?

THE COURT: As soon as the fan is on we'll let you know. Go right ahead.

MR. CLARK: Thank you, Judge.

Q. Doctor, if at any point you can't hear me, please just let me know and I'll be happy to speak up. Let me start by returning to testimony you gave before the lunch break. You were talking about the book Tobacco that was published in 1961; is that right?

A. Yes.

Q. That was published by Larson, Hogg and Silvette?

A. Yes.

Q. Now, you took the position this morning that the tobacco companies knew that nicotine was addictive and should have warned somewhere in the late 1950s and by 1961; is that right?

A. Yes.

Q. And in part that's because the 1961 book Tobacco was published in 1961?

A. Yes. That was a very comprehensive

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sort of encyclopedia of the research that had been done previously.
Q. In fact, that was probably the most comprehensive and thorough compilation of nicotine research that had ever been done; is that right?
A. For that time, yes.
Q. At that time. And you said that book had been funded by the Tobacco Industry Research Committee?
A. In part, yes.
Q. In part. That was the funding source.
And the Tobacco Industry Research Committee is an organization funded by the tobacco companies, isn't it?
A. Yes.
Q. Or it was at that point in time.
So in effect the tobacco companies were the ones funding Drs. Larson, Hogg and Silvette to research and put this book together; is that right?
A. Yes.

Q. And this book was actually published to the public in 1961, right?
A. It was published, yeah. I wouldn't say that many of public purchased. It scientists purchased it.
Q. What I mean is it was available to the public?
A. Yes.
Q. It wasn't something that was withheld within the tobacco industry; is that right?
A. That's correct.
Q. And the book was available to the public if they wanted it. It was available to the scientific community?
A. Yes.
Q. And it was also available to the government at the time?
A. Yes.
Q. And again, the tobacco companies were the ones who funded this?
A. Yes.
Q. And you agree, wouldn't you, that that was a good thing for the tobacco companies to do?
A. Yes.

Q. In fact, it is the kind of research you would encourage the tobacco companies to fund?
A. Yes.
Q. And you would applaud the tobacco companies for doing that?
A. Yes.
Q. And this book in 1961, Tobacco cites study after study after study concerning nicotine and tobacco and the effects of nicotine on humans, correct?
A. Yes.
Q. And it cites studies that were published back in the 1930s?
A. Yes.

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Q. And studies that were published back in the 1940s?
A. Yes.
Q. And studies published back in the 1950s?
A. Yes.
Q. And those studies were talking about nicotine and tobacco, weren't they?
A. Yes.
Q. And some of them were talking about the effect of nicotine on humans; is that right?

A. Yes.
Q. And some of them were talking about how nicotine was addictive?
A. Yes.
Q. So back in 1930s and '40s and '50s, the scientific community was aware, wasn't it, that nicotine was addictive, weren't they?
A. Well, they certainly were aware that nicotine was driving tobacco use. The only question which I talked about before is the terminology. There was some controversy about what it should be called. But the importance of nicotine in driving tobacco use was -- there was a lot published about that.
Q. And when you say about the terminology -- let's try to get away from the terminology. To a lay person, doesn't the word "nicotine" -- I'm sorry, doesn't the word "addiction" generally mean that it's something that that really can be hard to quit?
A. Yes.
Q. That's a fair statement, isn't it?
A. Yes.
Q. And so it was known in the scientific community in '30s, '40s and '50s before this book

was published that nicotine was in tobacco, and that cigarettes could be very hard to quit; isn't that right?
A. Yes.
Q. In fact, wasn't that known for over a hundred years before 1961?
A. Well, there was information that smoking was hard to quit. I think the role of nicotine was speculated upon.
Q. When you say speculated, wasn't there a study done in 1909 suggesting that nicotine was addictive?
A. Well, there were some early studies in looking at the pharmacology of nicotine. I don't know when the first study that suggests that or stated that nicotine was in that language. There were sort of basic animal studies in the early 1900s. The first human study that I think was pretty persuasive was the Johnson study that I talked about.
Q. Let's get to the issue of whether or not the scientific community was well aware decades before 1961 that nicotine was addictive. Is that true?
A. Before what year?

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Q. Before 1961.
A. There was good evidence to that, at least by 1942, I guess.
Q. And the public knew that as well, didn't they?
A. Well, the public never knew that this was a chemical dependency issue. I think what the public thought was that this was a bad habit.
Q. Well, before you agreed that to the lay person addiction means it can be very hard to quit, right?
A. Right.
Q. You agreed with me, didn't you?
A. Yes.
Q. So isn't it true that for several hundred years the public has known that tobacco can be very hard to quit?
A. That has been known, yes.
Q. And isn't it true that as far as back as when Columbus crossed the Atlantic and first encountered the Caribbean islanders, it was recognized that tobacco use could be hard to quit; isn't that true?
A. Well, I don't remember the exact language there. It's been known that tobacco use

was hard for some people to quit for several hundred years. What I don't think has been recognized, and there's a difference between being hard to quit because it's a bad habit, and being hard to quit because there's a chemical dependency that has been developed, and I think people's perception is different to those two ideas.
Q. General public, I believe --
A. It's an issue, but it's also an issue why if someone says, "You can't quit because you don't have will power. Anyone can quit it's just a bad habit," that's different than someone saying there's a chemical dependency. Your behavior or your smoking has been driven by a drug, and you have to detoxify yourself or now deal with this drug dependency. I think those are different perceptions for the smoker.
Q. Let me get back to the book Tobacco, in particular. You said it came out in 1961. The specific quote that Mr. Klok showed you from page 526 of that -- and that was AN 7776 if I remember -- said, "Most writers view tobacco smoking as both a habit and addiction." At least the scientific community that has been publishing from the '30s, '40s and '50s viewed it as an addiction, didn't

they?
A. Yes.
Q. And that was no secret?
A. Yes.
Q. So when Mr. Klok was showing you copies of Phillip Morris documents or Reynolds documents that suggested that the scientists at Reynolds or Phillip Morris recognized that nicotine was addictive, that wasn't a secret at that time, was it?

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A. Well, the idea wasn't a secret. I think the fact that the tobacco industry understood that was not well known.

Q. The fact that nicotine in cigarettes was addictive was not a secret at the time the documents that Mr. Klok showed you were published or written, yes or no, Doctor?

A. To scientists, yes.

Q. And the government knew it, as well, didn't they?

A. Yes.

Q. And in 1961, this comprehensive and thorough -- the encyclopedia that you called the Tobacco book that compiled all these different studies that suggested that nicotine was addictive,

that was available to the Surgeon General, wasn't it?

A. Yes.

Q. And in fact, the Surgeon General cited that in his 1964 report on smoking and health, didn't he?

A. Yes.

Q. And the Surgeon General considered it to be an authoritative source, didn't he?

A. Yes.

Q. And in fact, in 1964 when the Surgeon General published his report, there were even more studies about the effects of nicotine and addictiveness of nicotine than had been reported in the book Tobacco?

A. Yes.

Q. And yet the Surgeon General had this information, and in 1964 the Surgeon General decided that cigarette smoke and nicotine were not addictive, did he not?

A. He did because nicotine was not an intoxicant.

Q. The Surgeon General specifically said that cigarette smoking is not addictive; isn't that what he said in his report?

A. Yes.

Q. And yet he had access to the book Tobacco; is that right?

A. Yes.

Q. And he had access to the study after study after study that goes back to the '30s and '40s and '50s and also in the '60s suggesting that cigarette smoking was addictive; isn't that right?

A. Yes, but --

Q. Isn't that right, Doctor?

A. Yes, that's correct.

Q. And when the tobacco companies were saying in the '60s and '70s while Mrs. Mehlman was smoking that cigarette smoking is not addictive, isn't that exactly the same thing that the surgeon generals were saying at the same time?

A. It depends on the connotation.

Q. I'm asking about the words -- let me phrase it this way. The Surgeon General said Cigarette smoking is not addictive; is that correct, in 1964?

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A. Right.
Q. And if Phillip Morris or Reynolds said in 1964 cigarette smoking is not addictive, that would be the same thing that the Surgeon

General had said; is that correct?
A. If you want to say they are the same words, yes. The connotation very much depends on the context of to whom it is addressed, and it's very difficult if you have a big document --
MR. CLARK: Your Honor, I would object to the answer not being responsive. Let me rephrase the question.
THE COURT: If you rephrase the question, we get past all this.
Q. All right. Doctor, yes or no, in 1964 when Phillip Morris or Reynolds said that tobacco -- that cigarette smoking was not addictive, that would be the same as the Surgeon General had said in 1964; isn't that right, yes or no?
A. Again, the words would be the same.
Q. Yes or no, Doctor?
A. I cannot answer that question, because it's a loaded question.
Q. The Surgeon General's report was published to the public, wasn't it?
A. Yes.
Q. So the audience, in part, for the Surgeon General's report was the public?
A. Yes.

Q. And if Phillip Morris might have said cigarette smoking is not addictive or if Reynolds had said cigarette smoking is not addictive, it's the same public, isn't it?
A. Again, without explaining my answer, I cannot answer that question. It's a loaded question. It's not the same thing when the tobacco company puts a statement saying cigarettes are not addictive as when the Surgeon General in the content of a scientific document and qualifying it saying what we do know about it, for scientists, they are not the same thing at all.
Q. Doctor, throughout Constance Mehlman smoking history -- and I think you based your opinion on the sum of her smoking history of 1953 to 1974?
A. Yes.
Q. Throughout her history, the Surgeon General said cigarette smoking was not addictive; isn't that correct?
A. Yes.
Q. Now, you talked about the warning you felt would be appropriate?
A. Yes.
Q. You said it would say three things.

First you said, it would say, "Tobacco contains nicotine."
A. Yes.
THE COURT: Could you slow down, because we're taking this down.
MR. CLARK: I'm sorry.

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Q. The second thing, "Nicotine is a dependance producing substance."
A. Yes.
Q. And the third thing is "Smoking can be difficult to quit." Those are the three items that you think should have been included in this warning right?
A. Yes. And with a link to nicotine dependency meaning or explaining why smoking is difficult to quit.
Q. Until 1961, when you say this warning should have gone out, it wasn't a secret that tobacco contained nicotine, was it?
A. No.
Q. As a matter of fact, the government knew?
A. Yes.
Q. And the scientific community knew?
A. Yes.

Q. And the public knew?
A. Yes.
Q. And in fact, the fact that tobacco contains nicotine is something that had been known for over a hundred years; isn't that right?
A. Yes.
Q. So putting that on a warning is not telling the public or the scientific community or the government anything that hadn't been known for over a century; would it have been?
A. That's just the first part of a three part statement.
Q. I understand that. But with regard to that particular part of your warning; is that correct?
A. That's correct.
Q. Let's go to the next one. Nicotine is dependence producing substance. A dependence producing substance. In 1961, did the phrase "dependence producing substance" have a definition?
A. Well, it was certainly -- in trying to come up with a term that would avoid the distinction that the Surgeon General was trying to make, and the World Health Organization used "dependence" in 1964. Certainly the concept was

around before then. And I think if you wanted to pick a term that expressed the essence of what was going on without being hung up by the semantics, by the language, that would have been something that would have conveyed the fact that people, once they start using nicotine, have a hard time stopping using nicotine because of nicotine effects.
Q. Part of the reason you're having trouble coming up with a phrase is that in that period of time the Surgeon General was using a particular definition of addiction, wasn't he?
A. The surgeon general was using the World Health Organization definition.
Q. And under that definition cigarette smoking was not addictive?
A. That's correct.
Q. Now, the fact that nicotine was in

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cigarettes, and that nicotine had pharmacological effects, that's something that had been known for over a hundred years, as well, isn't it?
A. That nicotine was in cigarettes was known for a hundred years. The pharmacology of nicotine really started to be worked out in the beginning of 20th century.
Q. So you would say a hundred years ago.

Now, the fact that nicotine in cigarettes had a pharmacological effect was known?
A. Yes.
Q. All right. And it was also known, wasn't it, by the turn of the century that nicotine could cause dependence or addiction?
A. Well, I'm not sure by the turn of the century, but certainly by the 1940s, I think that was understood.
Q. All right. So in 1961, when you say this warning should have been out, the second part of your warning, "Nicotine is a dependence producing substance," that was something that was already known in the scientific community, wasn't it?
A. Well, it may have been known in the scientific community, but this was something that the consumer should have been told about, because I don't think the consumer really understood the concept of the chemical dependency until 1988 when the Surgeon General had published his findings.
THE COURT: Is it my understanding that you were looking for a yes or no.
MR. CLARK: I was looking for a yes or no.
THE COURT: Why don't you ask that?

Q. Yes or no, Doctor, the scientific community had known that nicotine was dependency or addictive producing at the turn of century?
A. No.
Q. They knew about it since the 1940s at least?
A. Yes.
Q. And isn't it also true that the public was aware that cigarette smoking could be addictive since at least the 1940s?
A. Cigarette smoking, not nicotine.
Q. Cigarette smoking?
A. Yes.
Q. They knew it could be addictive. As a matter of fact, in the popular culture there were phrases about nicotine addicts, weren't there?
A. Yes.
Q. And that was back in the '30s and '40s?
A. I don't remember the exact dates, but there were comments back then.
Q. Certainly before Mrs. Mehlman started to smoke?
A. I think so.
Q. Now, the third item on your warning

is smoking is difficult to quit, Doctor, are you suggesting that in 1961 that idea that smoking

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cigarettes could be difficult to quit was a secret?
A. No, I didn't see that.
Q. Are you suggesting that the public didn't already believe that cigarette smoking could be hard to quit in 1961 yes or no?
A. Some of the public.
Q. Some of the public believed it could be hard to quit?
A. Yes.
Q. Would you say most of the public believed cigarette smoking could be hard to quit?
A. It's hard to say, depends who you're talking about. If you ask that question today, it depends who you're talking about.
Q. Doctor, would you agree that the idea that cigarette smoking can be hard to quit is a concept that has been part of the popular culture rom as early as the mid 19th century?
A. For a long time, yes.
Q. As a matter of fact because of your expertise you may be well aware of Mark Twain's joke, aren't you?
A. Yes.

Q. And Mark twain said, "Cigarette smoking isn't hard to quit. I've done it hundreds of times."
A. Yes.
Q. So he was even making light of the popular culture knowing that cigarette smoking was hard to quit, wasn't he?
A. Yes.
Q. And Mark Twain was alive in the middle of 19th century?
A. Yes.
Q. So in 1951 if Phillip Morris or Reynolds had added to their package a label that included that sentence, "Smoking cigarettes can be difficult to quit," that really wouldn't tell anything the popular culture didn't already understand, would it, yes or no?
A. That's not exactly what I said. In isolation what you say is correct, but that's not what I said before.
Q. I'm not asking in isolation. I'm trying to break this down into individual ones, and I'm not suggesting that you don't have a right to discuss them collectively. But I'm saying on this particular idea, the third of the three ideas you

want to have in your warning, you're not saying that the idea that you want to put on a warning that smoking cigarettes can be difficult to quit, you're not suggesting that that is something that wasn't already part of the popular culture and would have provided people with new information?
A. That's correct.
Q. All right. Now, let me go back, if I may, to your discussions concerning Mrs. Mehlman, and unfortunately, I'm having lack of room here so I'll have to rearrange a little bit.
Now, you remember issuing a written report in this case, right?

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A. Yes.
Q. And in that report you said your opinion was that Mrs. Mehlman was highly addicted; is that right?
A. Yes.
Q. Today you said that she was -- your opinion was she was addicted; is that right?
A. I didn't qualify it, but I said she was addicted, yes.
Q. I guess what I'm trying to ask are you lowering your opinion as to the degree to which Mrs. Mehlman was addicted?

A. No.
Q. You think she was highly addicted?
A. Yes.
Q. And just to be perfectly clear here, so everyone understands, when you say that Mrs. Mehlman was addicted, you're not saying that she couldn't quit smoking, are you?
A. I'm saying that it was difficult for her to quit smoking.
Q. But you're not saying she couldn't quit, are you?
A. No.
Q. In fact, we know Mrs. Mehlman could quit smoking, don't we?
A. Yes.
Q. Because she did?
A. Yes.
Q. This is not a case of somebody who kept smoking and smoking and smoking until they passed away, is it?
A. No.
Q. She quit no later than 1974, almost a quarter of a century before she was diagnosed with lung cancer; isn't that right?
A. Yes.

Q. And you would agree, wouldn't you, that even smokers that you would describe as addicted or highly addicted can still quit smoking?
A. Yes.
Q. As a matter of fact, in the United States something like 50 million smokers have quit smoking, haven't they?
A. Yes.
Q. And right now there's more former smokers than there are smokers in this country?
A. Yes.
Q. Am I correct, I think this number is approximately right, something in the neighborhood of 1.3 million smokers quit every year?
A. I think that's about right.
Q. An overwhelming majority of those smokers who quit every year do so without any formal aids?
A. That's correct.
Q. They don't go to clinics. They don't use the patch. They don't use gum. They just do it on their own; isn't that right?
A. Yes.
Q. And the fact that it can be hard to

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quit -- and understand, I'm not suggesting that

cigarette smoking is not hard to quit for many people, but the fact that cigarette smoking can be hard to quit for some people doesn't mean that people can't quit smoking, does it?

A. That's correct.

Q. You mentioned before when Mr. Klok was asking you questions whether or not everyone could quit, and I think you said some people can't quit?

A. Right.

Q. Now, you're not saying that Mrs. Mehlman is one of those people?

A. Right.

Q. And that's a very, very small percentage of smokers; is that right?

A. We don't know the exact percentage, but probably not more than ten percent.

Q. It's a pretty small. And Mrs. Mehlman was not in that group, right?

A. That's correct.

Q. And you would agree that how easy or how difficult a particular smoker, an individual smoker as opposed to smokers in general, how easy or difficult a particular smoker might find it to quit smoking rests on many factors that are unique to

that particular individual?

A. Yes.

Q. Science can't just take the number of years somebody has been smoking and accurately predict how hard or different that smoker may have in quitting, can it?

A. Not precisely. There's a general -- there's a broad relationship, but not a precise relationship.

Q. There are many other factors unique to the individual; isn't that right?

A. Yes.

Q. So for example, one person who has smoked, say, 15 to 20 years, that person may actually have an easier time quitting than another person who only smoked five years; isn't that right?

A. Yes, that can happen.

Q. Now, let's talk a little bit about the video that you showed to the ladies and gentlemen of the jury awhile ago. Now, you were using that particular video to explain in kind of a general way how nicotine travels in the body and affects brain receptors?

A. Yes.

Q. You weren't suggesting that that was

the precise impact that nicotine had on Mrs. Mehlman, are you?

A. Well, I think the general things that occurred would have occurred in Mrs. Mehlman.

Q. I'm sorry. Actually, that was a poorly phrased question. What I mean is on your video you showed the difference in the activity of the receptor, how fast it was firing?

A. Yes.

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Q. Between somebody who has not smoked, somebody who was a smoker, and then somebody who was going through withdrawals after cessation, right?
A. Yes.
Q. And what I'm asking is the relative differences in the speed. You're not saying that that is a precise representation of Mrs. Mehlman, are you?
A. No. That's just a general picture of the type of changes that occur, but not precise for any individual.
Q. Okay. And even that, the speed or the degree to which the nicotine affects the receptors varies from person to person?
A. Yes.
Q. And it varies widely from person to

person?
A. Yes.
Q. And in fact, there are incredibly complicated genetic differences between person to person that will affect the number of brain receptors that are affected, the type, efficiency that they respond to nicotine; isn't that right?
A. Yes.
Q. And because they're genetic it varies completely from person to person?
A. Yes.
Q. And also these genetic factors will affect to a great extent how susceptible that person is to nicotine?
A. Yes.
Q. And that's from person to person?
A. Yes.
Q. And these genetic -- I'm sorry, the genetic differences can have a big effect on the degree to which a particular smoker may become dependent on nicotine; isn't that right?
A. Yes.
Q. And the genetic differences can have a big effect, ultimately, on how hard or how easy a person will find it to quit smoking; isn't that

right?
A. Yes.
Q. So the bottom line is, then, how hard or easy someone will have quitting smoking is a very personal individual analysis, isn't it?
A. We do know a lot about populations, so we do know aggregate information.
Q. I guess the question I'm asking you is what your aggregate information may be or what might apply to one smoker isn't necessarily what would apply to Mrs. Mehlman?
A. Well, yes. Each smoker is different.
Q. So when we talk about phrases like nicotine, or addiction, or dependence, or brain receptors, or dopamine, none of those words actually tell us how hard or difficult it was for Mrs. Mehlman to stop smoking beings do they?
A. No. Those explain why, in general, it's hard to quit smoking. In Mrs. Mehlman's case one has to look at her specific behavior.

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Q. You're one step ahead of me, Doctor. Let's look at her specific behavior, all right?
What I would like to do now is start taking you through the entire history of Mrs. Mehlman's smoking as best as we know it,

because what I would like to do is talk about some of your opinions in general, and then talk about how they apply in this case, given what we know about Mrs. Mehlman and what we don't know about Mrs. Mehlman, okay?
A. Yes.
Q. The main source of information that you had in forming your opinions was Dr. Mehlman's deposition testimony; is that right?
A. That's correct.
Q. You didn't interview Dr. Mehlman for that information?
A. No.
Q. It was just lawyers took his deposition and it was provided to you?
A. Yes.
Q. And you relied upon his deposition in forming your opinions?
A. Yes.
Q. Well, let's start with just a basic overview for the jury, so they know the big picture and then we can focus in, all right? There is evidence in Mrs. Mehlman's medical records, isn't there, she started smoking around the age of 17?
A. Yes.

Q. She was already at Hunter College at that time; is that right?
A. I believe so.
Q. And there's evidence that Mrs. Mehlman quit smoking for good for the rest of her life somewhere around 1973 or 1974, right?
A. Yes.
Q. Now, you would agree, wouldn't you, that the evidence about the amount of cigarettes Mrs. Mehlman smoked during her smoking history is pretty unclear; isn't that right?
A. There are different estimates, so some are a pack or more per day, some are half a pack per day.
Q. Let's focus then on the period of 1951 through 1959. Now, I think you told us when Mr. Klok was asking you questions this morning -- and I'm paraphrasing here because I can't write that quickly -- you said within a few years, Mrs. Mehlman was smoking a half a pack to a pack a day; is that right?
A. Yes.
Q. So a few years from 1951 is what you're referring to?
A. Yes.

Q. Doctor, isn't it true that we have no information at all about Mrs. Mehlman's smoking from 1951 until 1959?
A. The only information that I had came from Dr. Mehlman.

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Q. And the only information -- and Dr. Mehlman didn't meet Mrs. Mehlman until late 1959; is that your understanding?
A. That's correct.
Q. So obviously, Dr. Mehlman doesn't have any firsthand knowledge about his wife's smoking before he met her?
A. As far as I know, that's correct.
Q. So we know Dr. Mehlman doesn't have any firsthand knowledge of Mrs. Mehlman's smoking from 1951 through 1959. Can you cite me to any other evidence that you relied on that told you anything about her smoking history between 1951 and 1959?
A. Well, the only other thing, I don't know where it is, were physicians' records making estimates of pack years.
Q. Okay. But let's focus on the particular period of 1951 through 1959. We don't know, do we, whether or not she smoked consistently

during those years, do we?
A. I don't know that.
Q. We don't know whether she stopped for a month, a year, five years during that period of time, do we?
A. I don't know that.
Q. We don't know what brands of cigarettes she was smoking during those years?
A. The information that I received was that she was smoking Marlboros and Camels.
Q. And that was beginning 1959, isn't it?
A. I'm not sure if that referred to 1959 or throughout her whole smoking history. I'm not sure.
Q. You don't know that?
A. I don't know that.
Q. So when you said in response to Mr. Klok's questioning that Mrs. Mehlman smoked -- I'm sorry, let me refresh my recollection here.
You said that within a few years she was smoking a half a pack to a pack a day. What year are you saying she started smoking a half a pack to a pack a day?
A. Well, I was using general data on the

escalation of smoking to estimate that it took her three years to get up to that level. So I estimate 1954.
Q. So you're using general information to come up with this number?
A. Yes.
Q. And we already agreed before that in order to really evaluate an individual, you have to look at the factors of that individual's smoking history, didn't we?
A. Well, there is a certain amount of information that you can take from the general data, like consumption. We can't be precise but you can say most people who smoke half a pack to a pack per day even for ten years will have some difficulty quitting.

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Q. So when you look at a study --
THE COURT: I'm sorry. If he's done you can interrupt him, but I don't think he was done.
MR. CLARK: I'm sorry. I thought you were.
THE COURT: If it's not responsive tell me, but --
THE WITNESS: I forget what I was

saying, but that's okay.
THE COURT: That's the problem with afternoon objections. Go ahead.
Q. Doctor, you're basically saying you took a generic amount of data, took the average, and applied it to Mrs. Mehlman; is that right?
A. Yes.
Q. When you come up with an average that you use, I assume there are people at the high end and some people at the low end?
A. Yes.
Q. You have no idea where Mrs. Mehlman would have fit into that spectrum, do you?
A. Yes.
Q. So when you say within three years, she was up to a half a pack or a pack a day. That's just speculation, isn't it?
A. Yes.
Q. You're just making an estimate, aren't you?
A. I'm just making an estimate based on the general population.
Q. But you don't know if that applied to Mrs. Mehlman, do we?
A. That's right.

Q. Okay. Now, after Mrs. Mehlman met Dr. Mehlman in late 1959, do you recall what he testified as to what her smoking history was; is that right?
A. Yes.
Q. All right. And he said, didn't he, that she smoked until approximately 1973 or '74?
A. Yes.
Q. All right. Isn't it true that some of Mrs. Mehlman's medical records, several of Mrs. Mehlman's medical records say that she quit smoking altogether at the age of 32 in the mid 1960s?
A. I didn't see those records.
Q. Let me ask you, have you looked at Mrs. Mehlman's medical records?
A. No.
Q. Did you ask the plaintiff's attorneys for Mrs. Mehlman's medical records?
A. I don't recall. I don't think so.
Q. Would you consider it to be a relevant piece of information if there was evidence that Mrs. Mehlman told her doctors that she quit at the age of 32 in the mid 1960s; would that be relevant to your analysis?

A. Yes. If she quit, sure. All the

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information about how much she smoked and when she quit would be relevant.
Q. All right. But although you relied on some references in the medical records to determine when she started, you didn't rely on the -- any medical records to determine when she might have stopped, did you?
A. I was not aware of the records that you mentioned.
Q. So that's -- your opinion disregards the evidence that she may have stopped in the 1960s?
A. You mean quit altogether?
Q. Yes.
A. If that's the fact. Those are not the facts that I was addressing.
MR. CLARK: Charles, could you do me a favor. Can you pull up on the screen Reynolds 267929, page 3.
Q. This is from Mrs. Mehlman's medical records. I take it, Doctor, you had not seen this record before today?
A. That's correct.
Q. And I apologize. I know I'm walking between the Judge and the jury, but I just wanted to

point to you the second entry that starts SH/ -- thank you, Charles.
Do you see where it says, "Tobacco, pack per day, ages 17 to 32?"
A. Yes.
Q. And you didn't see that record before today?
A. No, I did not.
MR. CLARK: Charles, can you pull up Reynolds 267929, page 35? Can you highlight the social history up at the top?
Q. Do you see there where, again, under Social History it says she has smoked one pack per day from ages 17 to 32?
A. Yes. But is this the same doctor who wrote the other note, the same hospitalization?
Q. Doctor, I don't honestly know the answer to that.
A. It's important, because if one doctor wrote a note as part of the admitting note, and then they were carried across to all notes, if it's a mistake -- if different doctors wrote it on different hospital stays that would have different implication.
Q. But the fact is there are records

that state Mrs. Mehlman quit smoking -- that you haven't seen that she stopped smoking?
A. Yes.
Q. And you just haven't seen then before?
A. Yes.
Q. You just disregarded them as part of your opinion?
A. Yes. I haven't seen them before.
Q. Would your opinion change as part of this?
A. I didn't know what her whole smoking

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history was. If this was accurate, did she try to quit before? How many quit attempts, because a number of quit attempts, I assume, she made occurred much later than this. So are they not true? I don't know.

Q. Would you agree that Dr. Mehlman's testimony is not entirely consistent on the issue of how much his wife smoked?

A. I'm not sure I understand what point you're making. Where?

Q. Well, based on your review of Dr. Mehlman's testimony on the subject of how much his wife smoked, would you agree that the testimony

was not entirely consistent?

A. I would have to go back and look at my notes.

MR. CLARK: Charles, can you pull up please from Dr. Benowitz's deposition, page 46 and highlight lines 12 and 13, please. I believe it's page 46, line 12 and 13.

Q. Doctor, this is you speaking. "Her husband's testimony is not entirely consistent about that." Do you see that?

A. Yes.

Q. And you're talking about her smoking, the volume of smoking, the amount of cigarettes she smoked; is that right?

A. Yes.

MR. CLARK: All right. Thank you, Charles.

Q. Now, Dr. Mehlman testified that his wife smoked roughly a pack a day from 1959 until she quit around 1973, or 1974 right?

A. Yes.

Q. That's what he said. And am I right that he based that estimate on the fact that sometimes, sometimes he would see an empty carton in the garbage, and that's what he's basing his

estimate on; is that right?

A. I don't know if it was in the garbage, but I know his estimate was based on the fact that she bought about a carton a week or something like that.

Q. You don't remember his reference to seeing cartons in the garbage?

A. I don't remember that specifically.

Q. And can you specifically remember him saying he saw his wife buy a carton a week. You can't remember that, can you?

A. No. I just recall that he mentioned that he remembers his wife was using a carton a week.

Q. But based upon all the evidence that you saw, you concluded, didn't you, that Mrs. Mehlman smoked -- I think you said about a pack a day until mid 1960s, and then decreased to about a half a pack to a pack a day until she quit; is that right?

A. Yes.

Q. And if anybody is like me, maybe we should tell people what is in a pack of cigarettes.

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How many cigarettes are in a pack?
A. 20.

Q. So a pack a day is 20 cigarettes a day, roughly?
A. Yes.
Q. And a half pack obviously would be ten cigarettes a day?
A. Yes.
Q. Now, there's no evidence at all that Mrs. Mehlman was a chain smoker, is there?
A. Well, it's hard -- in general, a chain smoker is a person who smokes one cigarette after another.
Q. Right. There's no evidence that she smoked one cigarette after another?
A. We don't know what her pattern of smoking is.
Q. Right. We don't know what her pattern was?
A. I did say that.
Q. So there is no evidence that she was a chain smoker?
A. That is correct.
Q. And in terms of the number of cigarettes that Mrs. Mehlman smoked, you wouldn't describe her as a heavy smoker, would you?
A. Well, it depends if she was smoking

20 a day. That's where you start talking about heavy smokers. If she's smoking ten a day, ten to 20 is a moderate smoker.
Q. You describe her as a moderate smoker, don't you?
A. If you're smoking between 10 and 20, yes.
Q. So you would describe her as a moderate smoker, not a heavy smoker?
A. Yes.
Q. And if the evidence in this case shows that there were periods of time that she smoked, say, five to ten packs -- I'm sorry, five to ten cigarettes a day, what would you call that kind of smoker?
A. Well, if it's under ten cigarettes a day, I would call it a lighter smoker.
Q. Would it be fair to call her a casual smoker?
A. No, not necessarily. If you smoke five to ten cigarettes every day, that's still a regular smoker and you could be quite addicted. If you're smoking five or fewer and not smoking every day, that's more of a casual smoker.
Q. Also from your review of the

evidence, is it your understanding of the evidence that Mrs. Mehlman never switched to a low tar, low nicotine, a light or ultralight cigarette while she was smoking?
A. I saw no reference to that.
Q. Now, let's talk about your testimony concerning people's quitting attempts. You have a definition of what constitutes, a serious quit

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attempt, don't you?
A. Yes.
Q. And that is a person has to quit for at least 24 hours, right?
A. Yes.
Q. If somebody quits for 24 hours, you count that as they've made a serious attempt to quit, right?
A. Yes.
Q. Okay. And you told Mr. Klok in response to his questions that when you reviewed the testimony, you saw that Mrs. Mehlman made several unsuccessful attempts to quit, didn't you?
A. Yes.
Q. All right. Let's go through each one of these attempts to quit.
THE COURT: Before we do, get up,

take a stretch. Let me see counsel at side-bar.
(A discussion is held at side-bar off the record.)
THE COURT: He's just going to finish the section before we break. Go ahead, Mr. Clark.
MR. CLARK: Just one moment.
THE COURT: Sorry.
Q. Thank you, Doctor. And I'm saying, we're now going to go through -- is my voice okay?
THE COURT: I can't tell anymore.
Q. All right. In this deposition, Dr. Mehlman was asked, "When did your wife first try to quit smoking," wasn't he?
A. Yes.
Q. And Dr. Mehlman said that when they were living in Cambridge, Massachusetts, he thinks Mrs. Mehlman, quote, probably stopped for as much as a week, closed quote. Do you remember that testimony?
A. I didn't jot down the place. I jotted down that there was some quit attempts between 1960 and 1965 that could last up to a week.
Q. Okay. Now, the Mehlmans lived in Cambridge, Massachusetts from 1962 to 1965; does that sound right to you?

A. I just didn't pay attention to that.
Q. Let me represent to you, that the Mehlmans lived in Cambridge, Massachusetts --
A. Okay.
Q. -- between 1962 and 1965. So this week-long quit attempt would have happened during that period, correct?
A. Yes.
Q. And all we know about that period is this one week-long quit attempt; is that right?
A. Well, my notes say that there were quit attempts; didn't say how many.
Q. If the evidence in this case was that there was one quit attempt between 1962 and 1965, you can't cite us to anything that would disagree with that, can you?
A. No. I just jotted down what I saw in his deposition, which said some quit attempts.
Q. But we don't know, do we, when during

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the period of 1962 to '65, this three year period, this one week quit attempt happened, do we?
A. No.
Q. Just sometime when they were living in Cambridge, she quit for a week somewhere in between 1962 to 1965. That's all we know; is that right?

A. Yes.
Q. And before I go on, you can't cite us to any evidence that she made a serious quit attempt before that one, one-week quit attempt, can you?
A. No.
Q. So that was the first one. Now, let's go back to this one-week quit attempt somewhere between 1962 and 1965. Doctor, isn't it true that Mrs. Mehlman exhibited no symptoms of withdrawal during this week-long quit attempt; isn't that true?
A. Well, I don't know. I didn't see any information about that one way or the other, so I don't know.
MR. CLARK: Well, Charles if you would do me a favor and pull up from Mr. Mehlman's deposition, page 158, lines 11 through 13.
Q. Mr. Mehlman was asked, and this is in reference to this one-week quit attempt, "Did you notice any difference in her behavior during that week? No, she was fine."
Do you remember that testimony? Do you remember that?
A. I'm sure I read it. I didn't jot it down in my notes, but I'm sure I read it.

Q. That would suggest that Mr. Mehlman didn't notice any withdrawal symptoms, did he?
A. That's correct.
Q. He didn't say, "I don't remember, it was a long time ago or I'm not sure." He said, "No, she was fine."
A. Yes.
Q. So on that one occasion when you're talking about the withdrawal symptoms from your movie, there were none of those that we saw in that one week; is that right?
MR. CLARK: Charles, can you flash that movie withdrawal demonstrative?
THE COURT: Can we have a common term for this? Is it a movie? Is it a video?
MR. CLARK: Called "Brain."
MR. KLOK: It's a demonstrative, your Honor. It's entitled "Brain," correct?
THE COURT: So it's a visual aid video.
MR. KLOK: Correct.
THE COURT: We go to school so we can talk like this at the end of three years. Come on. Let's go.

Q. This is the video you showed the jury before; is that right?
A. Yes.
MR. CLARK: And Charles, can you sort

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of pull up to the side the symptoms of withdrawal so that we can read them better?

Q. Nicotine withdrawal. All right. On this quit attempt, these are the symptoms of nicotine withdrawal that you told the jury about?

A. Yes.

Q. We did not see any irritability?

A. No.

Q. No restlessness or drowsiness?

A. No.

Q. No difficulty concentrating?

A. No.

Q. No anxiety?

A. No.

Q. No depression?

A. No.

Q. No hunger?

A. Not that was stated.

Q. No weight gain?

A. No.

Q. And no sleep disturbance?

A. Not that was stated.

Q. No nicotine withdrawal symptoms at all on this occasion?

A. Yes.

Q. And she returned to smoking at the end of this week, according to Dr. Mehlman?

A. Yes.

Q. I'm sorry. Go ahead.

A. Yes.

Q. But we have no idea why she returned, do we?

A. That's correct.

Q. And under -- let me back up a moment. Mr. Klok was talking to you about DSM-IV before. Do you remember that?

A. Yes.

Q. And that's -- what does it stand for again?

A. Diagnostic Statistical Manual.

Q. Fourth edition?

A. Fourth edition.

Q. And there were editions I, II, III before that?

A. Yes.

Q. So this is the fourth edition of the

Diagnostic and Statistical Manual?

A. Yes.

Q. And that's a publication of the American Psychiatric Association?

A. Yes.

Q. What is the American Psychiatric Association?

A. Well, that's the professional organization of psychiatrists in the US.

Q. And is that considered a prestigious body, at least among psychiatrists?

A. Each sort of specialty group of physicians has their own organizations, and that's the organization for psychiatrists.

Q. All right. And DSM-IV includes a

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category for nicotine withdrawal symptoms, doesn't it?
A. Yes.
Q. And in order for you to find that somebody is suffering from withdrawal, isn't it true that you need to find four or more of the symptoms?
A. Yes.
Q. Within the 24 hour period; is that right?
A. Yes.

Q. And here on this one week, the first quit attempt that we can identify, there were none?
A. That's correct.
Q. So under DSM-IV, under the American Psychiatric Association's definition, you can't say that she was suffering from withdrawal; is that right?
A. That's correct.
Q. Now, let's see what she did or what we know or don't know about what she did in that one week. Do you remember whether she threw her cigarettes away?
A. I don't.
Q. Do you know whether she threw her ashtrays away?
A. No, I don't.
Q. Do you know whether she told Dr. Mehlman that she was going to quit?
A. I don't.
Q. Do you know if she told anybody she was going to quit to try to get family or friends' support?
A. I don't.
Q. And would these things be important information to you to determine the degree of her

motivation on that occasion?
A. Yes.
Q. But we don't know anything about that?
A. That's correct.
Q. All right. Let's now move on. That that was the first quit attempt?
A. Yes.
Q. Somewhere between 1962 and 1965, we don't know exactly when, but that was the first one. The second serious quit attempt. Do you remember what that was?
A. When she was pregnant with her daughter Allison.
Q. Okay. And her daughter Allison was born on February 28th, 1969; does that sound familiar?
A. Yes.
Q. So her pregnancy, if my math is right, would have started somewhere around April, May of 1968, right?
A. Yes.
Q. So this quit attempt we think starts somewhere around May of 1968?
A. Well, I don't know when during her

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pregnancy she quit.
Q. But it started somewhere during her pregnancy?
A. Yes.
Q. And the pregnant began in 1968?
A. Yes.
Q. So for our purposes let's call this the 1968 pregnancy quit?
A. Okay.
Q. All right. And you described this as a serious quit attempt, wouldn't you?
A. Yes.
Q. Because we know it lasted for quite sometime, right?
A. Yes.
Q. Dr. Mehlman told us that after she quit for this pregnancy, she returned to smoking about a month after delivery, right?
A. Yes.
Q. All right. And you've assumed that for purposes of your opinion?
A. Yes.
Q. Do you recall reading a different deposition in this case by Dr. Marvin Appel?
A. No. I did not see that deposition.

Q. You didn't?
A. I don't think so. Maybe I did look at it briefly. I don't have notes to that. That's the son-in-law.
Q. That's absolutely right.
A. I did read that. I don't have any notes to that deposition.
Q. Okay. Dr. Marvin Appel is one of the doctors and Mrs. Mehlman's sons-in-law. He's a physician. And his deposition was taken, and that deposition transcript was provided to you --
A. Yes.
Q. -- as one of the items, the sources of information for you to draw on to form your opinion, right?
A. Yes.
Q. Now, you don't remember specifically what you read in Dr. Appel's deposition, do you?
A. No. I didn't take any notes from that deposition.
Q. Okay. Let me see if this refreshes your recollection. Dr. Appel in this deposition said in 1997, he was with Mrs. Mehlman when she told her pulmonologist that she quit sometime in 1967 and didn't start smoking again until 1973. Does that

refresh your recollection?
A. I didn't jot that down. I don't recall that.
Q. So let's just focus for a moment on what we have in terms of the testimony for you to rely on here. We have Dr. Mehlman's testimony that at the end of Mrs. Mehlman's term with Allison, her third daughter in February of 1969, that she went back to smoking about a month later, right?
A. Yes.
Q. Dr. Appel said that he heard

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Mrs. Mehlman tell her pulmonologist that she quit for five or six years. You don't remember reading that?

A. I don't recall. Maybe I missed that section. I don't recall that.

Q. That's a pretty significant piece of evidence, isn't it?

A. Yes.

Q. I mean, you would suggest, wouldn't you, that that was a much more significant piece of evidence than your speculation about when she might have started in the 1950s, wouldn't you?

A. If that's accurate, that is important.

Q. All right. And let's now focus now, what we're calling the 1968 pregnancy quit, all right? We don't know if it lasted for a month after delivery, if you accept Dr. Mehlman's deposition testimony, or five or six years if you accept the testimony of Dr. Appel, right?

A. Yes.

Q. But either way, let's talk about withdrawal symptoms on that second serious quit attempt?

A. Okay.

THE COURT: However, before you posit that question.

MR. CLARK: Judge, this would be a great breaking point.

THE COURT: Let's take a ten minute break, okay.

(The jury leaves the courtroom.)

THE COURT: All right, folks. Ten minutes.

(A recess is taken.)

(The jury enters the courtroom.)

THE COURT: Okay. Thank you very much. Please be seated. Let's continue.

Q. Doctor, when we broke we were talking

about the 1968 pregnancy quit, and I want to turn now to your understanding of the testimony that you base your opinion on as to whether or not there were withdrawal symptoms on that quit attempt.

Would it be fair to say that under Dr. Mehlman's version that Mrs. Mehlman quit at that point for somewhere in the neighborhood of six, seven, eight, nine months, somewhere in that neighborhood?

A. Yes.

Q. And under Dr. Appel's recollection of having heard Mrs. Mehlman tell her pulmonologist she had quit that was through 1973, that would have been for five or six years, right?

A. Yes.

Q. Now let's talk about the withdrawal evidence from the 1968 quit attempt which may have lasted six, seven, eight, nine months or five or six years. Did Mrs. Mehlman exhibit any withdrawal symptoms on that quit attempt?

A. It was not stated in Dr. Mehlman's deposition that I saw.

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MR. CLARK: Okay. Charles, could you please pull up from Dr. Mehlman's deposition, page 160, line 22 to page 161, line 2. So let's start

with the first page, however you want to do it. And highlighting starting on line 22 of the first page to line two of the second.

Q. Now, this is again referring to Mrs. Mehlman's 1968 pregnancy quit, and when asked whether or not Mrs. Mehlman experienced any withdrawal symptoms for quitting for six, seven, eight, nine months or even as much as five or six years, he said, "She was fine. No differences, no. She was fine."

Do you remember reading that?

A. Yes.

Q. All right. So would it be fair to say that on this, the second of her serious quit attempts, there were no withdrawal symptoms?

A. That's correct.

Q. All right. Now, on this particular occasion, Dr. Mehlman specifically was asked -- and Charles, can you pull up -- I'm sorry is that me?

We have to remain perfectly still. Charles, would you do me a favor and pull up from Dr. Mehlman's deposition page 162, 5, through 19.

THE COURT: I'm sorry. Is there a question pending now?

MR. CLARK: No, not that I'm aware

of.

Q. Why don't you highlight lines 5 through 8 please.

Now again referring to this particular quit attempt, Dr. Mehlman was specifically asked, "Did Mrs. Mehlman report to you any physical symptoms as a result of her quitting smoking during her pregnancy?"

MR. KLOK: Objection, your Honor. Can we have a complete answer to that?

THE COURT: Can you scroll that down, Charles, so we can see the whole answer. That's fine.

Q. But she was asked whether she had any physical symptoms as a result of her quitting smoking during her pregnancy with Allison and he said, "She never mentioned that to me."

Now, the next lines, "I know she later on was very ill before she finally quit in the '70s." That line has nothing to do with the 1968 pregnancy quit, does it?

A. That's correct.

Q. So the only reference in this section is that when -- that Mrs. Mehlman does not report any physical symptoms as a result of her quitting

during this 1968 quit attempt; isn't that right?

A. Yes.

Q. Now, Doctor, when you talk about quit attempts -- I'm sorry, when you talk about withdrawal symptoms, isn't it true that the intensity of nicotine withdrawal symptoms diminishes over time?

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A. Yes. Although there are different time frameworks. There are short-term symptoms and there's some longer term symptoms.
Q. Okay. Let's go through those. The acute symptoms of nicotine withdrawal, for example, irritability. That would be an acute symptom, wouldn't it?
A. Yes.
Q. And restlessness?
A. Yes.
Q. And drowsiness?
A. Yes.
Q. And trouble concentrating?
A. Yes.
Q. Anxiety?
A. Yes.
Q. Trouble sleeping, kind of insomnia, those would be acute symptoms?

A. Yes.
Q. Now, those acute symptoms peak within the first two or three days?
A. Yes.
Q. And then they're gone after two or three weeks?
A. Yes.
Q. All right. Now, the other type of symptoms -- when you said there were different frames, the other type, I would call them mood symptoms?
A. Mood symptoms and cravings, as well.
Q. Things like you mentioned a lack of energy, would that be a mood symptom?
A. Lack of energy, low level of depression, finding that things are not as pleasurable in your life as they used to be, those are symptoms. And then cravings are commonly triggered by situations in which people used to smoke, for example, stress, and depression -- that is me.
THE COURT: Good news is it is not you, Mr. Clark. Go ahead.
MR. CLARK: I'm counting my lucky stars.

THE COURT: No, no, you're good. Go ahead.
Q. So the symptoms of just not feeling right, those last longer than two or three weeks?
A. Yes.
Q. Those can go on for several months, right?
A. Yes.
Q. But they do diminish in intensity and ultimately go away?
A. Yes.
Q. But here in this case, as to the second of the quit attempts, we don't have any evidence of acute symptoms; is that right?
A. We have no evidence of them.
Q. And we have no evidence of the mood symptoms, right?
A. That's correct.

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Q. So let's assume that Dr. Mehlman's version of events took place and that she returned to smoking about a month or so after she delivered Allison in February of 1969. She would have been not smoking for anywhere between half a year and, say, nine months, right?
A. Yes.

Q. So at that point, would you agree that Mrs. Mehlman was no longer experiencing any of the pharmacological effects of nicotine?
A. Well, she's not -- there's no nicotine in her body. She's not experiencing the -- at least the short-term withdrawal effects. There's a memory for nicotine effects that's linked to the pharmacology that can last for a long period of time. These are called conditioned responses where -- especially stress. A person who has used cigarettes to cope with stress for many years, when they face a stressful situation such as over work, after having a baby, or depression which is common after having a baby, those are very strong triggers, having stress. That's why there's a high relapse rate after pregnancy, because women are all of a sudden in situations where in the past they always treated this with nicotine, and then they relapse.
Q. So when you're talking about this learned response component, that is not pharmacological addiction that you were talking about this morning?
A. It's related to it, because it's developed because of nicotine effects, both the primary effects, say, on mood, and also the fact

that when a person has withdrawal, and say, one of their symptoms of withdrawal is feeling depressed, they have a cigarette, they feel better. As smokers learn that smoking a cigarette makes them feel less depressed or less stressed, and that learning that is tied for pharmacology, that memory persists for a long time.
Q. What you're really talking about is not really pharmacological addiction. You're talking about habit, aren't you?
A. I'm talking about something that is a response, a memory to a pharmacologic response.
Q. Would you agree that this response is not initiated or maintained by a pharmacological response to nicotine?
A. No, I wouldn't. This was initiated by nicotine.
Q. Many, many months ago?
A. Right.
Q. And all you're saying basically is that people miss the effects of their nicotine, and that triggers a response?
A. They've become dependent on nicotine as a way to deal with different stresses, and therefore, when they feel the stress it just

triggers a craving for nicotine.
Q. And Mrs. Mehlman didn't feel any of this learned response that you're talking about at

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the end of her 1968 pregnancy quit, correct?
A. Well, it's not reported. It's hard to go from the fact that it wasn't reported in Dr. Mehlman's deposition to she didn't experience it. At least he didn't know about it.
Q. Let me phrase it to you this way. Yes or no, Doctor, do you have any evidence on which you can base your opinion that would suggest that Mrs. Mehlman experienced any acute withdrawal symptoms, mood withdrawal symptoms, or learned response symptoms at the end of or during her 1968 pregnancy quit?
A. I don't.
Q. Okay. Doctor, now we're done with the second of the serious quit attempts. What is the third?
A. Well, there were a couple of attempts between 1970 and 1972. One time she went to a Seventh Day Adventist therapy group.
Q. Let's take -- I just wanted to know what the next one is?
A. I think the next one was the Seventh

Day Adventist therapy group.
Q. And it's your understanding that was between 1970 and when?
A. 1972.
MR. CLARK: Charles, can you pull up please, Dr. Mehlman's deposition, page 159, lines 15 to 21. Maybe we should start at the question before that, line 15, if you don't mind.
Q. All right. Now, Doctor, do you recall Dr. Mehlman saying after they were living in Cambridge -- and he doesn't mention the pregnancy quit in this section, but he says, "I think after we moved to the Washington area, I think that's where she made a couple of efforts." Do you remember that testimony?
A. Yes.
Q. Now, do you recall that the Mehlmans moved to Potomac, Maryland, and that's what is referred to as the Washington, DC area. Do you remember that?
A. I think so.
Q. And do you remember that they actually moved to Potomac, Maryland in 1972?
A. I don't recall the details.
Q. If I represent to you that they moved

to the Potomac area in 1972, you had no reason to disagree with me, do you?
A. No.
Q. So what Dr. Mehlman is saying that the next time Mrs. Mehlman had made a couple of efforts, it was somewhere after 1972 when they moved to the Washington area; is that your understanding?
A. That seems to be the case, yes.
Q. Now, you mentioned the Seventh Day Adventists. Is it your recollection that she went to a Seventh Day Adventists sponsored smoking cessation program somewhere in the Washington area?
A. Yes.
Q. And is it your recollection that that

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was -- basically she went for five meetings, maybe a week's worth of meetings. Is that your recollection?

A. Could be. I don't have that in my notes here. I don't recall how many times she went.

Q. If I represent to you that Dr. Mehlman testified that the Seventh Day Adventist program as five days or a week of training of courses on top of therapy, closed quote, you wouldn't question it, would you?

A. No.

Q. So now Dr. Mehlman seems to remember this one with more specificity than the other ones.

A. Yes.

Q. He drove her at night to those five meetings, right? Do you remember that?

A. I think so.

Q. And so he remembers that. When did the Seventh Day Adventist five day program start or when did it take place?

A. Are you asking me, in general, when the program was developed.

Q. Do you remember what Dr. Mehlman said about that?

A. I don't remember specifically.

Q. So we know that they moved to Potomac, Maryland somewhere around 1972, and we know there was an occasion where she went to the Seventh Day Adventist smoking cessation program?

THE COURT: I'm sorry. Is there a question pending or -- I want a side-bar now. Bring the reporter over.

(The following takes place at side bar outside the hearing of the jury.)

THE COURT: Mr. Clark, I've let this go on long enough. You're repeating the same

sentences four times, and I'm telling you step on it.

MR. CLARK: All right.

(The following takes place in open court.)

Q. Doctor, do you recall Dr. Mehlman testifying that she went to the Seventh Day Adventist program maybe in 1973 or 1974?

A. It could be. I did not write that down in my notes, but it could be.

MR. CLARK: Charles, could you pull up Dr. Mehlman's deposition testimony page 75, line 8 through 22.

MR. KLOK: Your Honor, the same objection. It doesn't seem to be a complete answer.

THE COURT: Sustained. Take them five or six lines at a time then, okay?

MR. CLARK: Sure.

Q. Dr. Mehlman was asked, "When did she go to the Seventh Day Adventist program?" Do you see that starting on line 18, Doctor?

A. Yes.

Q. And he says, "I know we were there. I don't remember when the time was. Maybe '73 or '74." He mentions he recalls driving her there

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after dinner.
A. Yes.
Q. Does that refresh your recollection of what you read?
A. Yes.
THE COURT: As to what issue? What does it refresh his recollection as to? As to who drove her?
MR. CLARK: As to the date.
THE COURT: Just posit that question.
Q. Does that refresh your recollection as to the date on a which she attended the Seventh Day Adventist program?
A. Yes.
Q. And when does Dr. Mehlman say his wife gave up smoking for good?
A. 1974.
Q. Didn't he say around 1973, '74?
A. Yes.
Q. Is it your understanding that she quit at approximately the same time she went to the Seventh Day Adventist program?
A. About. I don't know the exact -- if that was her final quit attempt or not, because the testimony is a little bit inconsistent. It seemed

like she went to several programs prior to quitting, and then later on quit for the final time. So I don't even know the exact sequence whether she did what.
Q. You said you had a sense she went to several different programs. Can you tell me what those other programs are?
A. No. They were just mentioned in those terms in Dr. Mehlman's depositions.
Q. But we don't know what the programs were?
A. I don't.
Q. And you don't know when she might have gone to them?
A. No. The only thing that was mentioned specifically were the Seventh Day Adventist program and hypnosis therapy.
Q. All right. Let's focus on the hypnosis therapy. The evidence isn't clear when she went to that, correct?
A. That's correct.
Q. And you didn't read anywhere in the testimony whether or not she actually tried to quit after going to the hypnosis, do you?
A. I assume that she did, because it was

discussed in the context of her quitting attempts, but I don't know any details about it.
Q. You can't say she quit for 24 hours as a result of that?
A. That's correct.
Q. So under your definition you couldn't count that as a serious quit attempt?
A. No. She obviously wanted to quit, but I couldn't say it was a quit attempt.
Q. All right. Any other quit attempts

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in the '70s that you know of?
A. No. Ultimately she did quit. I don't know exactly what year that was, but '72 or '74.
Q. So is it clear then that based on the evidence there are three serious quit attempts, the one between 1962 and '65 that lasted a week, the 1968 pregnancy that lasted either six to nine months or five or six years, and then the final quit attempt that was about the same time as the Seventh Day Adventist program. Is that a fair review of your understanding of the testimony?
A. Well, there may have been more, because Dr. Mehlman was vague in his deposition. One time he said that she tried to quit more than

one time in the 1960s, and then he said 1970s she tried several programs. So I don't know exactly how many there were. There were at least those three and maybe more.
Q. But those are the only three that you could characterize in your definition of serious quit attempts?
A. They are the only ones I know about, right.
Q. Now, after this final quit attempt, Dr. Mehlman referenced his wife exhibiting some nervousness and irritability, right?
A. Yes.
Q. This is in the final 1973 to '74 quit attempt?
A. Yes.
Q. And that was the quit attempt that she succeeded for the rest of her life, right?
A. Yes.
Q. So she exhibits some nervousness and irritability and also some cravings later, right?
A. Yes.
Q. Do you know when the nervousness and irritable or cravings occurred?
A. I don't have exact details in terms

of when with respect to quitting.
Q. So would that be important to you in determining whether or not these were withdrawal symptoms?
A. Well, I would like to know more about it, if I could.
Q. Let's focus on the nervousness and irritability. Would you agree, Doctor, that Mrs. Mehlman had a number of stresses in her life that might lead her to be nervous and irritable?
A. Yes.
Q. And those stresses in her life had nothing to do with her smoking; is that right?
A. Some of them.
Q. Well, some of them would include what?
A. She had some conflicts at different times with her children. There were some marital conflicts, actually were related to smoking. I think there were some other stresses too. I don't remember specifically what they were.

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Q. So you can't conclude to a reasonable degree of medical certainty when Dr. Mehlman reported that his wife seemed anxious or irritable at some point after she quit in 1973 or '74 that

those symptoms were related in any way to the withdrawal of nicotine; is that true?

A. I can't say it definitely, but it would be consistent if he said elsewhere, if she didn't smoke she could develop severe anxiety from tobacco smoking. So there were different places where the symptoms would be consistent. I can't say there's something else causing them at that particular time.

Q. And just what you just read to me in relation to what? Which of the quit attempts that we talked about are these references to symptoms that you just read?

A. Well, this is not specific to the quit attempt. I just have a note, Dr. Mehlman was commenting on some of the things that Mrs. Mehlman experienced when she was smoking. It relaxed her. She used to it control body weight. And then he says, "Afterwards, she didn't smoke, she would develop severe anxiety." I don't know if that was specific to the quit attempt or just if she didn't smoke for a few hours, so I don't know.

Q. So we can't associate that with any of the quit attempts?

A. That's right.

Q. Then she quit in 1973 or 1974, right?

A. Yes.

Q. She was between 38 and 39 years old, right?

A. Yes. I think so.

Q. Now, if Mrs. Mehlman didn't experience any withdrawal symptoms in any of the three serious quit attempts that we talked about, that wouldn't be unique for a smoker, would it?

A. That could happen.

Q. Would you agree that, say, 15 to 20 percent of smokers experience little or no withdrawal symptoms when they quit?

A. Yes.

Q. Could it be even higher than that?

A. Could be.

Q. And when Mrs. Mehlman was smoking in the mid 1960s, there were roughly 70 million smokers in the United States?

A. Approximately.

Q. So if you do the math, it means there were roughly 14 million smokers in the United States that could have quit with little or no withdrawal symptoms, correct?

A. Right, but I always make it clear

that withdrawal symptoms are only one of several reasons why people smoke. It's not the only one.

Q. I'm not asking in terms of why they smoke. I'm asking in terms of their ability to quit?

A. Or why they can't quit.

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Q. Would you agree that the smoker that experiences no withdrawal symptoms or only mild withdrawal symptoms is not a highly addicted smoker?
A. Not necessarily. There are people who smoke for other things, like, mood control, to help them focus on their jobs, things like that, that may have specific cues for their smoking, reasons why they feel they need cigarettes that don't translate in the general withdrawal symptoms.
Q. And you have no evidence that Mrs. Mehlman smoked for mood control?
A. I would guess she probably did, but I don't have evidence that that's the case.
Q. You're just guessing?
A. Well, she had a history of depression, and most depressed smokers do smoke to deal with mood, with depression.
Q. But it's still speculation. You have no evidence?

A. That's correct.
Q. And you have no evidence that she smoked in order to help her perform at work?
A. That's correct.
Q. Now, one of the factors that you consider important in determining whether a smoker is addicted is whether or not they can refrain from smoking in places where it's forbidden?
A. Yes.
Q. That's one of the factors that you would consider?
A. Yes.
Q. Is there any evidence in the record here that Mrs. Mehlman had any difficulty refraining from smoking in places where it was forbidden?
A. Not that I saw.
Q. Would you consider it to be an important factor whether or not Mrs. Mehlman could refrain from smoking in places where she chose not to smoke?
A. Yes. It depends on the circumstances and what was going on and for how long.
Q. Do you recall reviewing in Dr. Mehlman's testimony that Mrs. Mehlman refrained from smoking in his presence while they were dating

from 1959 until they were married in September of 1960; do you remember seeing that?
A. I believe so.
Q. So she refrained on that occasion, correct?
A. Yes.
Q. Would you agree that the testimony was that she generally didn't smoke in her husband's presence throughout their marriage?
A. Yes.
Q. So she generally refrained in front of Dr. Mehlman from smoking?
A. Yes.
Q. Would you agree -- well, let me rephrase that question.
You read the depositions of the Mehlmans three daughters, didn't you?

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A. Yes.
Q. That's Mara the eldest, and Hope, and Allison the youngest?
A. Yes.
Q. Did you notice that none of them recall ever seeing their mother smoke, ever, except once that Mara reported seeing her mother smoke a single cigarette at a party, once. Do you remember

that?
A. Yes. The comments about Hope said after her mother quit, she always wanted to smoke, but not --
Q. Doctor, "yes" or "no" will suffice.
A. You're correct.
Q. Thank you. Would that suggest to you that she refrained from smoking in front of her children?
A. Yes.
Q. And her children were of tender years for most of her smoking history, weren't they?
A. Yes.
Q. Mara was 14 years old when she quit, wasn't she?
A. I believe so.
Q. But they were living at home?
A. Yes.
THE COURT: Mr. Clark, are you going into another area? Would this be maybe a good time to stop?
MR. CLARK: If I could just have five minutes.
THE COURT: Sure.
Q. So Doctor, you're still telling us

that in your opinion she was highly addicted, right?
A. Yes.
Q. But all we have in the evidence is three serious quit attempts. Two of them, we know there were no symptoms of withdrawal. The third one there are symptoms she's experiencing, but we don't know if they're associated with withdrawal. Is that a fair summary of evidence?
A. That is the evidence, but there's also other evidence that I think is critical.
Q. What evidence would that be, Doctor?
A. She was living with a man who severely disapproved of her smoking, and she kept on smoking for years. In that context, there are many marital conflicts about her smoking. She had asthma; she kept on smoking. She tried to quit smoking. She went to Smoke Enders or to the Seventh Day Adventists. She went to hypnosis. So there were obvious reasons why this woman should not be smoking. She tried to quit smoking and she went on smoking. This is evidence.
Q. There's no evidence that she went to Smoke Enders, is there?
A. I meant Seventh Day Adventists.
Q. And you mentioned that smoking was a

source of confrontation with Dr. Mehlman; is that right?

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A. Yes.
Q. As a matter of fact, it was a source of confrontation from the moment they met, wasn't it?
A. I think so.
Q. Do you recall the testimony being that they met at a dance in 1959?
A. Yes.
Q. And the very first thing that happened was they got into an argument about her smoking. That's the very first thing that happened. Do you remember that?
A. I remember it happened early on in the relationship.
Q. But they got married --
A. Yes.
Q. -- in September of 1960. Do you remember the testimony that Dr. Mehlman warned her that smoking was dangerous?
A. Yes.
Q. And Dr. Mehlman is an MIT trained Ph.D. toxicologist; is that your understanding?
A. Yes.

Q. And they actually had fights about it?
A. Yes.
Q. They had shouting fights?
A. Yes.
Q. Do you recall one shouting fight, Dr. Mehlman told her that she was going to die and that she was killing herself by smoking?
A. Yes. I think that to me that's pretty compelling evidence, that someone and having a person who is knowledgeable within their personal relationship to make a statement like that and keep on smoking for many years.
THE COURT: All right. Now I'm stopping.
MR. CLARK: All right, Judge.
THE COURT: Folks, if you put your notebooks down, Al will take you out. Please don't discuss the case and we'll see you tomorrow ready to go at nine o'clock.
(The jury is excused.)
THE COURT: Doctor, you may step down. You're excused until tomorrow.
(The trial is adjourned at 3:55 p.m.)

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